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ABSTRACT

An estimated 80%-90% of all Aboriginal students enrolled in the primary and secondary schools of Victoria, Australia, were tested and surveyed to determine their numbers, distribution, attendance, achievement, attitudes, and school leaving patterns. Most of the 1244 Aboriginals surveyed attended state schools and 75% were schooled in rural areas. Their attendance was regular but they had more extended absences than non-Aboriginal students. At the primary level (where the father's occupational ranking is the most significant factor affecting academic achievement), Aboriginal students performed consistently lower than non-Aboriginal students on academic achievement tests. At the secondary level, lower achievement by Aboriginals was especially evident in math and reading. Although non-Aboriginals in primary school had more positive attitudes than their Aboriginal agemates, this difference disappeared in secondary school. There were no marked differences noted in educational or occupational aspirations, but more Aboriginal students left school at age 15. Specific to Victoria, results did not support the view that low achievement of Aboriginals could be attributed to poor motivation, poor self-concept, or dislike of school. Research is needed to study what factors determine whether or not a student likes school. (SB)

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ABORIGINAL STUDENTS IN VICTORIA

Marion M. de Lemos

Australian Council for Educational Research

3

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NOTE

The terms 'grade' and 'form' have been used throughout this report. These were the terms in use at the schools at the time the studies were undertaken, and are still the terms which are more commonly used and more familiar to most Victorians. In order to obtain uniformity of terminology across the states, the term 'year' was introduced officially in 1974 to replace the terms 'grade' and 'form'. However, this term is still not widely used in schools, although it has been adopted in official publications. Grade 1 to Grade 6 correspond to Years 1 to 6 in the new terminology, while Form 1 to Form 6 correspond to Years 7 to 12. The Prep grade is referred to as the Preparatory year in the new terminology.

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CHAPTER 1

BACKGROUND TO THE STUDY

Introduction

In 1969 the Australian Council for Educational Research was approached by the Director of Aboriginal Affairs in Victoria to undertake an inquiry into aspects of the schooling of Aboriginal children. The reason for the inquiry was the concern felt regarding the educational future of Aboriginal children in Victoria. It was known that Aboriginal children tended to leave school very early, and it was believed that this occurred even in cases where their achievement at school would have made it reasonable for them to continue. This situation was considered to produce two problems. It left potentially very competent Aboriginal children with their full potential unrealized, and it produced a larger proportion of relatively uneducated Aboriginals than in the population as a whole, thus contributing to the sterotype of ethnic inferiority. It was therefore decided to undertake a series of studies to obtain further information on the factors related to the school achievement and school leaving patterns of Aboriginal students.

The first study undertaken was a study of the language and conceptual abilities of Aboriginal children in Victorian primary schools. The results of this study were reported by Bruce, Hengeveld and Radford (1971).

The conclusion from this first study was that Aboriginal children were handicapped in their language and conceptual skills, and that this was likely to affect their later schooling. It was also concluded that since Aboriginal children, as a group, are likely to perform less well at school than their Australian and migrant counterparts, they are also likely to derive less satisfaction from school and to be less easily persuaded to aim at completion of secondary schooling and further study.

At the same time attention was drawn to the overlap in scores of different groups, with many 'bright' Aboriginal children scoring above the mean of the total group, and many 'dull' Australian children scoring below the mean of the total group.

The main recommendations arising from this study were the need for an extensive program of directed and intensive pre-school experience for all Australian children likely to have poor verbal skills, including Aboriginal and migrant children, and the need for an extensive program of remedial work beginning at entry to school and concentrating on verbal skills and on concepts essential to the mastery of numbers and quantitative thinking.

The need for further studies on the actual school achievement of Aboriginal children at both primary and secondary level was also indicated, as well as studies on the school leaving patterns and vocational aspirations and choices of Aboriginal school leavers.

A series of further studies were then undertaken, commencing in late 1971. These studies included a survey of the total Aboriginal primary school population, a survey of the total Aboriginal secondary school population, the testing of samples of Aboriginal and non-Aboriginal primary school children on a series of achievement and ability measures, and the testing of the total population of Aboriginal 14-year-old students attending secondary school, together with comparison groups of non-Aboriginal students, on a series of achievement tests, ability measures and attitude scales. The secondary school students were also interviewed to obtain information on their educational and occupational aspirations.

Some preliminary reports on the results of these studies have been produced, but the purpose of this report is to bring together the main findings from this series of studies in a single report. The report will be divided into three main sections, the first section reporting the results of the survey studies, the second section reporting the results of the primary school testing program, and the third section reporting the results of the secondary school testing program. However, prior to the reporting of these studies, some background information on Aboriginal education in Victoria will be given to provide some sort of framework and perspective in which to place the findings of the series of studies reported here.

Aboriginal Education in Victoria

Prior to 1969, there was no detailed information available on the enrolments of Aboriginal children in primary and secondary schools of Victoria. The census figures for the Aboriginal population of Victoria were also unreliable, owing to difficulties of classification and changing definitions of an 'Aborigine'. However, since 1969 a number of developments occurred which focused attention on the education of Aboriginal children and resulted in the collection of more accurate statistics relating to the participation of Aboriginal children at all levels of the education system.

The first major development was probably the setting up of the Aboriginal Education Incentive Scholarship Fund (AEISF) in 1965. This fund was established following a meeting of representatives of secondary school and university committees concerned with the education of Aboriginal students in Victoria. The purpose of the fund was to provide economic incentives to encourage Aboriginal students to remain in school beyond the school leaving age in order that they could qualify for a wider range of employment opportunities and consequently a higher level of income as adults. The first scholarships were awarded in 1966, and this scheme was gradually expanded to include all Aboriginal students in Victoria. It was supported by the newly established Victorian Ministry of Aboriginal Affairs from 1970 to 1974. However, following the establishment of the Commonwealth Department of Education's Aboriginal Secondary Grants Scheme in 1970 for students aged 14 years or older, and the subsequent expansion of this scheme in 1973 to all Aboriginal secondary school students, the Aboriginal Education Incentive Scholarship Fund concentrated its main emphasis on primary school children, and it was phased out in 1974.

An evaluation of the AEISF program (Cresap, McCormick and Paget, 1975) indicated that the Fund had measurable but mixed success in meeting its objectives. There appeared to have been some improvement in school attendance during the period of its operation, but there was no evidence of a significant impact upon the academic performance of Aboriginal students. There were however other benefits in terms of increasing contact and communication between Aboriginal parents and school staff, providing Aboriginal parents with economic resources to meet school fees, equipment expenses and the costs of school excursions, and encouraging the use of bank accounts. There was also some evidence that the scheme had a positive effect on the attitudes toward Aboriginal students of the school staff who participated in the scheme. However, the major importance of this scheme is that it marked the beginning of a new interest in and concern with the education of Aboriginal children, and focused attention on the needs and problems of Aboriginal students. New developments overtook this scheme, but in its design and its aims it foreshadowed the later Commonwealth Aboriginal Secondary Grants Scheme.

Another important development was the establishment of the Victorian Ministry of Aboriginal Affairs in 1968. The Ministry indicated at an early stage its special interest in education, and made a number of initiatives in this area. These included the promotion and funding of research studies, the establishment of a tutorial scheme for Aboriginal primary and secondary students in collaboration with Abschol[1], and the provision of financial assistance and scholarships for primary and secondary school students. In 1972 two pre-school advisers were appointed and a pre-school award scheme was instituted to cover the cost of pre-school fees for Aboriginal children. This initiative led to a dramatic rise in the number of Aboriginal children attending pre-school. The annual reports of the Ministry provided detailed information on the number of Aboriginal students attending secondary schools, and on the number of primary and secondary scholarships and pre-school awards held by Aboriginal students. This information provided a basis for the compilation of systematic information on Aboriginal students in Victoria.

In 1975 the functions of the Victorian Ministry of Aboriginal Affairs were transferred from the State Government to the Commonwealth Government, and the previous Ministry for Aboriginal Affairs became the State Office of the Commonwealth Department of Aboriginal Affairs. Responsibility for educational programs was transferred to the Victorian Department of Education, which set up a special branch within the Special Services Division devoted entirely to Aboriginal education, while responsibility for the administration of the pre-school award system was transferred to the Victorian Department of Health. The Commonwealth Department of Education continued to administer the Commonwealth Aboriginal Secondary Grants Scheme. The effect of these changes has yet to be seen, but it does seem to have led to a dispersal of effort in the Aboriginal education field, and it is possible that in the larger State Departments of Health and Education the special needs of Aboriginal children may get less priority and less emphasis than was the case in the former Ministry of Aboriginal Affairs.

The establishment of the Commonwealth Aboriginal Secondary Grants Scheme in 1970 and the extension of this scheme to all Aboriginal secondary students in 1973 also marked an important development in Aboriginal education and provided a basis for the collection of systematic data on Aboriginal secondary school enrolments throughout Australia. The purpose of these grants was to encourage Aboriginal students to remain at school and if possible to complete secondary schooling. The Commonwealth Department of Education also introduced the Aboriginal Study Grants Scheme in 1969. This scheme provided grants for post-secondary education, and was designed to raise the educational and social levels of Aboriginal people by assisting them to take courses of study which would enable them to improve their economic level or to pursue an interest in a particular branch of knowledge.

---

[1] Abschol is an association of the Australian Union of University Students, set up to promote and assist the education of Aborigines.

The recent evaluation of the Aboriginal Secondary Grants Scheme (Watts, 1976) indicates that this scheme is having some success in encouraging Aboriginal students to stay on longer at school, and to reach the higher levels of the secondary school. However, the figures for Victoria do not as yet indicate any clear trend for Aboriginal students to stay on longer at school (see Tables 1.3 and 1.4).

While the effects of the various initiatives that have been taken in Aboriginal education over the last ten years may not show up in the short term, it is inevitable that these initiatives will have long-term effects. Of particular importance are the changes in attitude toward education on the part of the parents, and the changes in attitudes toward Aboriginal students on the part of teachers. Aboriginal parents and groups are becoming increasingly aware of the importance of education for their own realistic self-determination and social advancement. This will lead to greater encouragement and support for Aboriginal students to complete secondary schooling and to go on to further education. Changes in attitudes on the part of the teachers are coming about as a result of increased social awareness of the problems of Aboriginal students, and through the greater contact and communication between teachers and parents as a result of schemes such as the Aboriginal Secondary Grants Scheme. Teacher training colleges are also increasingly providing courses in Aboriginal studies, and a greater knowledge and understanding of Aboriginal history and culture on the part of the teachers should lead to more sympathetic attitudes and more encouragement and support for Aboriginal students in the school situation.

Population and School Enrolments

The total Aboriginal population of Victoria in June 1971 numbered 5656. Of these, a total of 1509 were aged between five and fourteen years, that is, were of compulsory school age.

Statistics on the Aboriginal population of Victoria prior to 1971 are not easy to interpret. The census definition of an Aborigine in 1971 was a person who considered himself to be an Aborigine. However, in 1966 the census definition of an Aborigine was a person who had 50 per cent or more Aboriginal ancestry. This difference in definition undoubtedly accounts to a considerable degree for the tremendous increase in the census figures for the Aboriginal population in Victoria from 1966 to 1971 (1790 in 1966 to 5656 in 1971). Prior to 1966 the census figures included only persons of part-Aboriginal descent. Full-blood Aborigines were enumerated as completely as possible, but were not included in the official statistics. However, an examination of the census figures for 1961 and 1966 indicated considerable doubt as to the validity of the distinction between full-blood Aborigines and part Aborigines. Revised estimates of the total number of Aborigines, defined as persons of 50 per cent or more Aboriginal ancestry, for the 1954, 1961 and 1966 censuses were published in 1969 (Commonwealth Bureau of Census and Statistics, 1969). According to these estimates the Aboriginal population of Victoria increased from 1395 persons in 1954 to 1796 in 1961 and 1790 in 1966.

School enrolments

Reliable figures on the school enrolments of Aboriginal children prior to 1970 are not available. An estimate of the Aboriginal enrolment in Victorian secondary schools in 1966 was 243 (Tatz, 1969), while in 1960 only 30 Aboriginal children were known to be enrolled at secondary school. However with the establishment of the Victorian Ministry of Aboriginal Affairs in January 1968 more systematic information on Aboriginal school enrolments gradually became available, although only secondary school enrolments were systematically reported.

Secondary school enrolments. Aboriginal secondary school enrolments at each form level from 1969 to 1977 are shown in Table 1.1. Figures for the years 1970 to 1974 are taken from the Annual Reports of the Victorian Ministry of Aboriginal Affairs, while figures for the years 1975 to 1977 are based on information supplied by the Commonwealth Department of Education. The figures for 1969 were supplied by the Ministry of Aboriginal Affairs.

These figures indicate a marked increase in secondary school enrolments from 1969 to 1977, particularly between the years 1969 to 1973. However, it is difficult to determine whether this increase indicates an increased enrolment of Aboriginal students at secondary school, or whether it is merely due to more accurate figures on secondary school enrolments. The introduction of the Aboriginal Secondary Grants Scheme in 1970 for Aboriginal secondary students aged 14 years or over, and subsequently in 1973 for all Aboriginal secondary school students, led to the availability of much more accurate information on the actual number of Aboriginal students attending secondary schools. From 1973 onward the figures for Aboriginal secondary school

Table 1.1 Aboriginal Secondary School Enrolments in Victoria, 1970-1977

Year	Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Ungraded or unknown	Total
1969	99	69	46	19	4	2	86	325
1970	130	98	85	51	21	5	0	390
1971	138	127	94	76	28	10	0	473
1972	123	130	144	80	51	5	0	533
1973	182	144	148	107	39	8	4	632
1974	166	189	130	98	45	10	2	640
1975	161	146	142	101	77	12	2	641
1976	186	176	143	95	44	18	2	664
1977	194	176	157	99	32	10	0	668

enrolments given in the Annual Reports of the Victorian Ministry of Aboriginal Affairs correspond to the figures provided by the Commonwealth Department of Education on the number of Aboriginal Secondary Grant holders.

The figures on secondary school enrolments for 1970 to 1973 provide a breakdown according to type of school attended. This breakdown is not available for the years 1974 to 1976, but is provided in the 1977 survey undertaken by the Aboriginal Education Section of the Victorian Education Department. These figures allow an examination of any change in trend according to type of school attended (see Table 1.2).

These figures indicate no marked changes in the type of secondary school attended by Aboriginal students over the period 1970 to 1977. Over 90 per cent attend government schools, and of these approximately one-third attend technical schools and two-thirds attend high schools. The proportion attending non-government schools ranged from 6 to 8 per cent from 1970 to 1973, but rose to 13 per cent in 1974 (when the only breakdown given was attendance at a government or non-government school), and dropped to 4 per cent in 1977. The proportion of children attending special schools showed a gradual increase from 1970 to 1977. The reason for this is not immediately obvious. It could be merely a matter of more accurate figures being available for the later years than for the earlier years, or there may have been a change in criterion as to what was included in the 'special school' category in 1977 as compared with the earlier years. The 1977 figures include a number of special schools attached to training centres.

Table 1.2 Type of Secondary School Attended, 1970-1977

Year	Total Number of Secondary Students	Percentage of Students Attending:			
		Technical	High	Non-government	Special
1970	390	34	59	7	0.3 (1)
1971	475	29	64	6	0.4 (2)
1972	533	31	61	7	0.9 (5)
1973	632	34	57	8	0.6 (4)
1974	640	NA[a]	NA[a]	13	NA[a]
1977	678	32	60	4	3.8 (26)

[a] Breakdown of attendance at government schools (i.e. high school, technical school, or special school) not available for 1974.

The proportion of Aboriginal secondary students enrolled in metropolitan schools and in non-metropolitan schools over the period 1973 to 1977 remained fairly stable, with approximately one-third of students attending metropolitan schools and two-thirds attending non-metropolitan schools. There was some trend for a slight increase in the proportion of girls attending secondary school, rising from 48 per cent in 1973 and 1974, to 50 per cent in 1975 and 1977. These figures are however not sufficient to indicate whether there has been any real trend for a higher proportion of Aboriginal girls to stay on at secondary school.

The figures can also be analysed to indicate whether there has been any trend for a higher proportion of Aboriginal students to go on to the higher form levels, or to stay on longer at school. These analyses are shown in Tables 1.3 and 1.4. In Table 1.3 the number of students in Forms 4, 5 and 6 and the number of students in Forms 5 and 6 are shown as a percentage of the total Aboriginal secondary school population, while in Table 1.4 the number of students aged 15 and over and the number of students aged 16 and over are shown as a percentage of the total Aboriginal secondary school population.

The figures in Table 1.3 indicate a rise in the proportion of students at the higher form levels from 1970 to 1972, a drop in 1973 followed by a rise to 1975, and a further drop in 1976 and 1977. The apparent rise from 1970 to 1972 is probably due to the fact that with the establishment of the Aboriginal Secondary Grants Scheme for students aged 14 years and over, more

Table 1.3 Percentage of Aboriginal Secondary Students at Higher Form Levels, 1970-1977

Year	Total Aboriginal Secondary School Population	Percentage of Students in Form 4, 5 & 6	Percentage of Students in Forms 5 & 6
1970	390	20	7
1971	473	24	8
1972	533	26	11
1973	632	24	7
1974	640	24	9
1975	641	30	14
1976	664	24	9
1977	668	21	6

accurate figures were available for the older students at the higher form levels. This has probably resulted in an overestimate of the proportion of students at the higher form levels in 1970 to 1972. From 1973, when the Secondary Grants Scheme was extended to all Aboriginal secondary school students, the figures are probably more accurate at all levels of the secondary school. These figures therefore indicate a rise in Aboriginal enrolments at the higher form levels immediately following the introduction of the Secondary Grants Scheme for all Aboriginal secondary students, but this rise was not maintained, and was in fact followed by a decline. The

Table 1.4 Percentage of Aboriginal Secondary Students Aged 15 and over and Aged 16 and over, 1970-1977

Year	Total Aboriginal Secondary School Population	Percentage of Students Aged 15 and over	Percentage of Students Aged 16 and over
1970	390	34	16
1971	473	30	13
1972	533	32	13
1973	632	28	11
1974	640	25	11
1975	641	29	12
1976	664	23	10
1977	668	21	7

Table 1.5 Number of Aboriginal Secondary Students Aged 15 and over as a Percentage of the 15- to 19-Year-Old Aboriginal Population

Year	Aboriginal Population Aged 15 to 19 Years	Number of Aboriginal Students Aged 15 and Over	Aboriginal Students Aged 15 and Over as a Percentage of Aboriginal Population Aged 15 to 19 Years	Victorian Students Aged 15 to 19 Years as a Percentage of Victorian Population Aged 15 to 19 Years
1971	627	141	22	39
1976	687	152	22	42

reason for this decline is not known. It is unlikely that it could be attributed to the change in the employment situation over this period, since the higher rate of youth unemployment has tended to increase the proportion of young people staying on at school rather than to decrease it. Clearly this is a trend which must be carefully watched over the next few years, as it is critical to determining the success of the Aboriginal Secondary Grants Scheme in achieving its stated objective.

The figures for the proportion of Aboriginal students aged 15 and over and aged 16 and over show a similar trend. Again, the greater accuracy of the figures for students aged 14 and over as a result of the Secondary Grants Scheme has probably resulted in an overestimate of the percentage of students at the older age levels in 1970 to 1972, but the more accurate figures from 1973 to 1977 show a very slight increase in the proportion of older students at secondary school from 1973 to 1975, followed by a decline in 1976 and 1977.

The proportion of Aboriginal students aged 15 and over can also be calculated as a percentage of the total Aboriginal population aged 15 to 19 years. This is shown in Table 1.5. The population figures are based on the 1971 census figures, the figures for 1976 being based on the assumption that the 10- to 14-year-old population in 1971 constitutes the 15- to 19-year-old population in 1976. Comparable figures for Victorian students as a whole are also shown. These figures indicate no change in the proportion of Aboriginal students aged 15 and over staying on at school from 1971 to 1976. There is however a slight increase in the proportion of Victorian students aged 15 to 19 staying on at school (from 39 per cent in 1971 to 42 percent in 1976), and the proportion of Victorian students aged 15 and over who are still at school is considerably higher than the proportion of Aboriginal students in this age range who are still at school.

Primary school enrolments. Information on primary school enrolments is more difficult to obtain. One source of information is through the

Table 1.6 Total Aboriginal Primary School Enrolments, 1971-1974 and 1977

Year	1971	1972	1973	1974	1977
Estimated primary school enrolment	962	989	928	875	1287

Aboriginal Education Incentive Scholarship Fund, established in 1965. The first scholarships from this Fund were awarded in 1966 to five secondary students, and from 1967 to 1970 there was a gradual expansion of the program. From 1971 all Aboriginal primary school children were eligible for a scholarship. The Fund terminated in 1974.

The total number of primary scholarships awarded during the years 1971 to 1974 therefore provides an approximation of the total number of Aboriginal primary school enrolments. The total number of Aboriginal primary school enrolments in 1977 is available from the recent survey undertaken by the Aboriginal Education Section of the Victorian Education Department. Estimates of the total Aboriginal primary school enrolment during the period 1971 to 1974 and in 1977 are shown in Table 1.6.

These figures show an increase in primary school enrolments from the 1971-1974 period to 1977. As in the case of the secondary school enrolments, it is likely that this apparent increase is due to more accurate figures for 1977 than for the earlier years. Not all Aboriginal primary school children would have held AEISF scholarships in the period 1971 to 1974, and in some areas AEISF scholarships were terminated at the end of 1973. This would account for the lower figure for 1974 as compared with the earlier years.

Pre-school attendance. The pre-school attendance of Aboriginal children has shown a dramatic increase since 1971, when only twelve Aboriginal children were known to be attending pre-school. In February 1972 the Ministry of Aboriginal Affairs appointed two qualified kindergarten teachers as pre-school advisers, and instituted a pre-school scholarship scheme for Aboriginal children which covered the cost of pre-school fees and allowed a small sum for other expenses. This scheme was taken over by the Department of Health in 1976. In addition, a mobile pre-school unit was set up in East Gippsland in 1974.

The number of Aboriginal children in receipt of pre-school awards during the period 1972 to 1977 is shown in Table 1.7, together with estimates of the

Table 1.7 Pre-School Enrolments of Aboriginal Children in Victoria, 1971-1977

Year	1971	1972	1973	1974	1975	1976	1977
Number of Aboriginal children in receipt of pre-school award	-	92	110	105	109	75	76
Estimated number of Aboriginal children attending pre-school	12	102	120	115	119	-	140

total Aboriginal enrolment at pre-schools from 1971. Figures for pre-school awards for the period 1972 to 1975 were supplied by the Department of Aboriginal Affairs, while figures for 1976 and 1977 were supplied by the Department of Health. The figure for the total pre-school enrolment in 1977 is based on the survey undertaken by the Aboriginal Education Section of the Victorian Education Department.

The estimates of the total enrolment of Aboriginal children at pre-school from 1971 to 1975 are based on information given by the Department of Aboriginal Affairs. No estimate is available for 1976. These figures do not include the children attending the mobile pre-school in East Gippsland (35 during the period 1974-1975).

The figures in Table 1.7 indicate a marked increase in pre-school enrolments from 1971 to 1973, and thereafter a slight increase, although there was some decline in the number of pre-school awards in 1976 and 1977 when the scheme was transferred from the Department of Aboriginal Affairs to the Department of Health. By 1977 the total number of pre-school enrolments (140) was close to the total number of Prep grade enrolments (166)[2]. While the pre-school enrolment figures do not distinguish between three-year-old and four-year-old children (i.e. children who will go on to school the following year and younger children who will spend a second year at pre-school), these figures do suggest that a high proportion of Aboriginal children are now attending pre-school for at least one year prior to entry to school.

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[2] The figure for Prep grade enrolments for 1977 is taken from the 1977 survey undertaken by the Aboriginal Education Section of the Victorian Education Department.

CHAPTER 2

THE SURVEY STUDIES

The aim of the survey studies was to obtain basic information on the total Aboriginal primary and secondary school populations. As indicated in Chapter 1, there was little reliable information available on Aboriginal school enrolments, school attendance or school performance at the beginning of 1970, and in order to make any assessment of the problems faced by Aboriginal students and the reasons for early school leaving it was thought necessary to obtain basic information on the population of Aboriginal school children.

The primary school survey was undertaken at the end of 1971, and the secondary school survey was undertaken at the end of 1972. In both cases all schools with Aboriginal enrolments were contacted, and were asked to complete questionnaires seeking information on the children's school performance and other relevant background information.

In the case of the primary school survey, the Aboriginal population was identified by means of the records held by the Ministry of Aboriginal Affairs on all primary school children holding an Aboriginal Education Incentive Scholarship Fund award. This information included the name of the child, the grade level, and the school attended. In the case of the secondary school survey, the Aboriginal students were identified by means of the records held by the Ministry of Aboriginal Affairs. In the case of the secondary students, those aged 14 years and over were eligible for a Commonwealth Secondary Grant, while those aged under 14 years were eligible for an Aboriginal Education Incentive Scholarship Fund award. Information on the secondary school students included the name of the student, the form level, and the school attended.

Information on the initial number of primary and secondary students identified and the number of schools contacted, and on the number of schools who responded and the number of students on whom information was obtained, is shown in Table 2.1.

The response rate from primary schools was very good, with 96 per cent of schools responding, providing information on 90 per cent of the Aboriginal primary school population identified. The response rate from secondary schools was a little lower, but information on 82 per cent of the population identified was obtained.

Table 2.1 Number of Aboriginal Students Identified and Number of Aboriginal Students on whom Information Obtained: Primary and Secondary Level

	Primary Level	Secondary Level
Total Number of Aboriginal Students Identified	901	534
Total Number of Aboriginal Students for whom Questionnaires Returned	807	437
Per Cent Return (Students)	90	82
Total Number of Schools Contacted	184	149
Total Number of Schools Responding	176	133
Per Cent Response (Schools)	96	89

Results of the Surveys

Geographic location of students

The distribution of Aboriginal primary and secondary school students in country and metropolitan schools is shown in Table 2.2. At both the primary and secondary levels the majority of Aboriginal students were located in country schools, with approximately three-quarters of the students in country schools and one-quarter in metropolitan schools.

The location of Aboriginal students in particular country and metropolitan areas or districts is shown in Table 2.3. Of the students attending country schools, the majority were located in northern Victoria or eastern Victoria. The proportion of students attending schools in western Victoria was slightly higher at the secondary level than at the primary level.

Of the students attending metropolitan schools, the majority of students at the primary level were located in the northern and western suburbs, with some students in the inner and south-eastern suburbs but relatively few in the eastern suburbs. This pattern was slightly different at the secondary level, where there were still a high proportion of students in the northern suburbs but relatively more students in the eastern and south-eastern suburbs and relatively fewer in the western and eastern suburbs.

Table 2.2 Distribution of Aboriginal Students in Country and Metropolitan Areas

	Primary Level		Secondary Level	
	Number	Per Cent	Number	Per Cent
Country Area:				
Number of Students	624	77	328	75
Number of Schools	116	67	66	54
Metropolitan Area:				
Number of Students	183	23	109	25
Number of Schools	60	34	57	46

Type of school attended

In the case of the secondary school students, a breakdown of the type of school attended was obtained. The percentage of country and metropolitan students attending each type of school is shown in Table 2.4.

The majority of students were attending a state high school, but the proportion of students attending a high school was higher in the country than in the metropolitan area, where a higher proportion of students attended state technical schools. A small proportion of both country and metropolitan students attended Catholic schools, but only a few students attended other independent schools, mainly in the metropolitan area.

Table 2.3 Location of Aboriginal Students in Specific Country and Metropolitan Areas

	Primary Level		Secondary Level	
	Number	Per Cent	Number	Per Cent
Country Areas:				
Western Victoria	89	14	71	22
Northern Victoria	342	55	138	42
Eastern Victoria	193	31	119	36
Total Country	624	100	328	100
Metropolitan Areas:				
Western Suburbs	45	25	15	14
Northern Suburbs	74	40	34	31
Eastern Suburbs	9	5	26	24
South-eastern Suburbs	24	13	30	28
Inner Suburbs	31	17	4	4
Total Metropolitan	183	100	109	100

Table 2.4 Percentage of Country and Metropolitan Secondary Students According to Type of School Attended

Type of School Attended	Metropolitan Students	Country Students	Total Secondary Students
State High School	49	62	58
State Technical School	40	27	31
State Central School	0	4	3
Catholic School	5	6	6
Other Independent School	6	1	2
N	109	328	437

At the primary level the majority of the children attended state schools, with 97 per cent of the sample attending state primary schools and 3 per cent attending Catholic primary schools. The proportion of children attending state and Catholic schools was the same for both country and metropolitan samples. Only one primary school child attended a non-Catholic independent school. This child was located in the metropolitan sample.

Distribution of students by grade and form

The total number of Aboriginal students in each grade at the primary level and in each form at the secondary level is shown in Table 2.5.

At the primary level there was some increase in enrolments from Prep to Grade 1, followed by a slight decrease in enrolments from Grade 2 to Grade 6. At the secondary level there was some increase in enrolments from Form 1 to Form 3, followed by a sharp drop in enrolments from Form 3

Table 2.5 Distribution of Aboriginal Students by Grade and Form Level

Primary Level	Prep	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Total
Number of Students	114	132	132	116	102	113	98	807

Secondary Level	Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Total
Number of Students	103	117	122	55	36	4	437

Table 2.6 Number of Enrolments at each Grade or Form Level as a Percentage of the Total Enrolment for Country and Metropolitan Students

	Percentage at each Grade or Form Level							
Primary Level:	Prep	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Total Enrolment
Country Students	13	17	16	15	12	15	12	624
Metropolitan Students	20	13	17	12	15	11	11	183
Victoria (1971)	14[a]	14[a]	14	14	15	14	14	479 460

Secondary Level:	Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Total Enrolment
Country Students	24	29	29	10	8	0	328
Metropolitan Students	23	20	25	20	8	4	109
Victoria (1972)	22	22	20	17	13	7	310 643

[a] Prep grade enrolments are not shown separately in the Victorian statistics. Of the total enrolment at the Grade 1 level, half were allocated to Prep and half were allocated to Grade 1 to obtain these percentages.

to Form 4, and a further drop from Form 4 to Form 5. There were only four students at the Form 6 level.

The number of enrolments at each grade or form level as a percentage of the total enrolment for country and metropolitan students is shown in Table 2.6. Comparable figures for Victoria as a whole are also shown (Commonwealth Bureau of Census and Statistics: Victorian Office, 1971; 1972).

The pattern of enrolments for country and metropolitan students was similar. However, at the primary level there was some trend for a relatively higher proportion of metropolitan children at the Prep level and a relatively higher proportion of country children at the Grade 1 level. It is possible that this could be due to the fact that some of the smaller country schools may not have a separate Prep grade, and children may therefore be placed directly into Grade 1 on entry to school. These children may then spend two years at the Grade 1 level. The figures for Victoria show an even distribution over the primary grades.

At the secondary level the drop in enrolments from Form 3 to Form 4 was more marked for the country students than for the metropolitan students, and there were a higher proportion of metropolitan students at the higher form

Table 2.7 Average Age of Aboriginal Students at each Grade and Form Level

	Primary Level				Secondary Level		
Grade Level	Aboriginal Country Students	Aboriginal Metropolitan Students	Total Victorian Students[a]	Form Level	Aboriginal Country Students	Aboriginal Metropolitan Students	Total Victorian Students[a]
Prep	5.8	5.7					
Grade 1	6.8	6.9	6.1	Form 1	13.1	13.0	12.8
Grade 2	8.0	7.8	7.7	Form 2	14.4	14.6	13.8
Grade 3	9.1	9.0	8.7	Form 3	15.5	15.1	14.7
Grade 4	10.1	9.9	9.7	Form 4	16.3	16.3	15.7
Grade 5	11.1	10.9	10.7	Form 5	17.2	17.1	16.7
Grade 6	12.5	12.0	11.7	Form 6	-	18.6	17.8

[a] Source: Commonwealth Bureau of Census and Statistics: Victorian Office, 1971; 1972.

levels (32 per cent of metropolitan students in Forms 3 to 6 compared with 18 per cent of country students at these form levels). The percentage of Aboriginal students in Forms 5 and 6 is lower than that for Victorian students as a whole.

Age of students

The average age of Aboriginal students at each grade or form level in country and metropolitan schools is shown in Table 2.7. The average age at each level for the Victorian population as a whole is also shown for comparative purposes.

The average ages of the Aboriginal students tended to be slightly higher than the Victorian average, particularly at the upper primary and secondary levels. However, differences were generally not more than six months. There was a slight trend for the average age of the Aboriginal country students to be higher than the average age of the Aboriginal metropolitan students, but this trend was found mainly at the primary level. The marked difference in the average age at the Grade 1 level between the Aboriginal and Victorian students is due to the fact that the figures for Victoria combine the Prep and Grade 1 levels. If the Aboriginal Prep and Grade 1 enrolments were combined the average age would be close to that given for Victorian Grade 1 children.

Table 2.8 Percentage of Students Rated as Regular or Irregular School Attenders

Attendance	Primary Level	Secondary Level
Regular	86	77
Irregular	14	23

School attendance

For both primary and secondary students teachers were asked to classify the students according to whether their school attendance was regular or irregular. Teachers were also asked to state the actual number of days absent during the first two terms of the year.

The percentage of students at the primary and secondary level rated as regular or irregular attenders is shown in Table 2.8. At both the primary and the secondary level the majority of students were rated as regular attenders. The proportion of regular attenders was slightly higher at the primary level than at the secondary level.

The percentage of children in each category according to the actual number of days absent in the first two terms of the year is shown in Table 2.9. Over half the students at both primary and secondary level were absent for no more than ten days during the first two terms of the year. About 30 per cent were absent for between 11 and 30 days, but less than 10 per cent were absent for more than 30 days.

These figures for the school attendance of Aboriginal students in Victoria are similar to those reported by Bourke and Parkin (1977) for Aboriginal 10-year-old and 14-year-old students attending normal schools. However, these figures indicate higher rates of absence for Aboriginal students as compared with Australian students overall.

Table 2.9 Percentage of Primary and Secondary Students in each Category According to Number of Days Absent

Days Absent	0	1-10	11-20	21-30	31-40	41-50	Over 51
Primary Students	5	54	21	9	4	3	3
Secondary Students	11	45	25	11	5	2	1

Table 2.10 Percentage of Students According to Number of Previous Primary or Secondary Schools Attended

Number of Previous Schools Attended	Nil	1	2	3 or more
Primary Level	58	34	5	2
Secondary Level	78	21	1	0

Number of previous schools attended

Teachers were asked to provide information on the number of previous schools attended as an indication of the mobility of Aboriginal students. The results on this question are shown in Table 2.10. In the case of secondary students, the information requested was only on the number of previous secondary schools attended.

The mobility of the primary school students tended to be somewhat higher than the mobility of secondary school students. While 58 per cent of primary students had attended only one primary school, 78 per cent of secondary students had attended only one secondary school. Only four of the secondary students (1 per cent) had attended more than two secondary schools as compared with 62 (7 per cent) of the primary school students in this category.

Number of grades or forms repeated

Information was also obtained on the number of grades or forms repeated at both the primary and secondary school levels.

The percentage of students repeating one or more grades or forms at the primary and secondary level is shown in Table 2.11. In the case of secondary students, only forms repeated at the secondary level were taken into account.

Only 9 per cent of primary students and 6 per cent of secondary students had repeated a grade or a form. Two of the primary school children had repeated two grades, and one child had repeated three grades. None of the secondary school students had repeated more than one form level. The percentage of Aboriginal secondary students repeating a form is however higher than that for Victorian students as a whole, 2 per cent of Victorian students being reported as repeating a form in 1972 (Commonwealth Bureau of Census and Statistics: Victorian Office, 1972).

Table 2.11 Percentage of Children Repeating One or More Grades or Forms

Number of Grades or Forms Repeated	Nil	1	2	3
Primary Level	91	8	< 1(2)[a]	< 1(1)[a]
Secondary Level	94	6	0	0

[a] Number of cases shown in brackets.

An analysis of the actual grades or forms repeated indicated that at the primary level it was the lower grades (Prep to Grade 2) which were more frequently repeated. A similar trend was found at the secondary level for the lower forms to be more frequently repeated than the higher forms.

School performance

Teachers were asked to rate the school performance of each student on a five-point scale. The five categories on the scale were: outstanding, above average, average, below average, and very poor. In the latter category teachers were asked to place students judged to be in need of remedial teaching or placement in a special school or remedial class. In the case of primary school students the teachers were asked to make an overall rating, but in the case of secondary students the teachers were asked to list the subjects taken by each student and to give a rating for each subject. Ratings on each subject were then combined to give an average for the overall rating.

The percentage of students rated in each category at the primary school level and at the secondary school level is shown in Table 2.12. A higher proportion of students at both the primary and the secondary level were rated in the below average categories than in the above average categories, with a higher proportion of ratings in the very poor category at the primary level. No students at the secondary level were rated in the outstanding category, but a small proportion (4 per cent) of the primary students were rated in this category.

The smaller proportion of students rated in the extreme categories at the secondary level is probably due to the way in which this overall rating was obtained, that is by averaging ratings over a number of different subjects. A small proportion of the secondary students were rated in the outstanding category for specific subjects, while there were quite a high

Table 2.12 Teacher Ratings of School Performance: Percentage in each Category

	N	Very Poor	Below Average	Average	Above Average	Outstanding
Primary Level	786	17	36	37	10	4
Secondary Level	431	8	39	43	10	0

proportion of students in the very poor category on specific subjects, particularly mathematics. The proportion of students in the below average categories tended to be higher in the academic subjects (English, mathematics, science and humanities), and lower in the less academic subjects (trade subjects, art, physical education and music). The percentage of secondary students rated in each category in the basic school subjects of English, mathematics, science and humanities is shown in Table 2.13.

At the secondary level teachers were also asked to give an assessment of the student's potential for further education or the type of occupation which the student was capable of taking up. Five categories were distinguished: the potential to complete a university course, the potential to undertake non-university tertiary level studies, the potential to undertake a professional or technical training course such as trade apprenticeship or nursing, the potential for clerical or sales work, and the potential for unskilled or semi-skilled work only. The percentage of secondary students in country and metropolitan areas rated in each of these categories is shown in Table 2.14.

Over 20 per cent of metropolitan students and 10 per cent of country students were assessed as having the potential for tertiary level studies at

Table 2.13 Teacher Ratings for Specific Subjects at the Secondary Level: Percentage of Students Rated in each Category

Subject	N	Very Poor	Below Average	Average	Above Average	Outstanding
English	422	14	37	36	12	2
Mathematics	397	23	38	28	10	2
Science	374	15	45	28	12	1
Humanities	413	16	36	33	14	1

Table 2.14 Teacher's Assessment of Student's Potential: Percentage of Secondary Students in each Category

	N	University Course	Non-University Tertiary Studies	Technical or Professional Training	Clerical or Sales Work	Unskilled or Semi-skilled Work
Metropolitan Students	106	8	16	45	15	15
Country Students	318	3	7	41	24	26
Total Secondary Students	424	4	9	42	21	23

a university or at a tertiary level college. A further 42 per cent of students were assessed as having the capability of undertaking other technical or professional training at a lower level. Thus well over half the Aboriginal students were considered to be capable of some form of post-secondary training, and a further 20 per cent were considered capable of white-collar jobs in the clerical and sales field. Only just over 20 per cent were considered to have the potential for unskilled or semi-skilled work only.

These assessments suggest that the high proportion of Aboriginal workers in semi-skilled or unskilled occupations is not due to a lack of capacity for higher level occupations, but rather a lack of opportunity to undertake the necessary training and gain the necessary skills for occupations at the skilled and professional levels.

For students at the secondary level teachers were also asked to indicate the students intentions for the following year, that is whether the student intended to carry on at school, to leave school and go on to further studies, or to leave school and get a job. Since schooling is compulsory up to the age of 15 years, these results are shown both for the total secondary sample and for students aged 15 years and over (see Table 2.15).

Of the students aged 15 and over, 63 per cent intended to continue at secondary school the following year, 6 per cent intended to leave school to go on to further studies, and 31 per cent intended to leave school to get a job. Of the students aged 15 years, 36 per cent intended to leave school. This compares with 15 per cent leaving school in a sample of Melbourne 15-year-olds surveyed in 1972 to 1974 (Poole, 1978).

Table 2.15 Students Intentions for Following Year: Percentage of Students in each Category

	N	Continue at Secondary School	Leave School for Further Studies	Leave School and get a Job
Total Secondary Students	398	77	3	20
Students Aged 15 and over	222	63	6	31

A further analysis of school leavers' intentions according to teacher's assessment of potential was made. This is shown in Table 2.16. These results show some relationship between the student's potential as assessed by the teacher and his intention to go on to further studies. However, only half the school leavers rated as capable of tertiary level studies intended to go on with further studies, and only 19 per cent of the students rated as capable of technical or professional training intended to carry on with further studies. This indicates a high wastage rate among Aboriginal students assessed as capable of post-secondary training.

Attitude to work

In the primary school survey teachers were asked for additional comments on the student's school performance or behaviour in school, including comments on special gifts or abilities, special difficulties, problems of behaviour or adjustment, and acceptance by other children.

Table 2.16 Intentions of School Leavers According to Teacher's Assessment of Potential: Percentage of Students in each Category

Teacher's Assessment of Potential	N	Intention of School Leaver: Further Study	Job
University Course	1	100 (1)[a]	0 (0)
Non-University Tertiary Studies	6	50 (3)	50 (3)
Technical or Professional Training	37	19 (7)	81 (30)
Clerical or Sales Work	21	10 (2)	90 (19)
Unskilled or Semi-skilled Work	25	0 (0)	100 (25)

[a] N shown in brackets because of small number of cases in some categories.

Table 2.17 Teacher's Assessment of Attitude to Work: Percentage of Students in each Category

	Total Sample	N[a]	Attitude to Work		
			Very Good	Fair	Poor
Primary Level	807	231	29	46	24
Secondary Level	437	430	25	41	33

[a] Number of cases in which teacher's assessment of attitude to work available.

Comments relating to the students' attitudes to work were analysed and classified into three main categories: very good attitude to work (works well, keen, tries hard), fairly good attitude to work, and poor attitude to work (lazy, careless, indifferent). These categories were then applied in the secondary school survey and teachers were asked to rate the students according to these three categories.

The percentage of students classified in each of the three categories at the primary and secondary levels is shown in Table 2.17. It should however be noted that in the case of the primary school students comments on attitudes to work were available on only about 30 per cent of the total sample.

These results show a similar proportion of students with good attitudes to work and with poor attitudes to work (24 to 33 per cent), with about 40 per cent or more of the students in the middle category. The proportion in each category at the primary and secondary school levels is similar, despite the difference in the way in which this information was obtained (analysis of spontaneous comments at the primary level, systematic ratings according to defined categories at the secondary level). There was however some trend for more comments in the very good category and fewer comments in the poor category at the primary level, and it is possible that if this information had been collected more systematically for the primary school students a different pattern would have emerged at the primary level.

Acceptance by other students

Comments relating to the acceptance of Aboriginal students by other students in the school in the primary school survey were classified into three categories: fully accepted (student is fully accepted and mixes well with the other students), qualified acceptance (student is accepted by other

Table 2.18 Teacher's Assessment of Acceptance of Aboriginal Students: Percentage of Students in each Category

	Total Sample	N[a]	Fully Accepted	Qualified Acceptance	Not Accepted
Primary Level	807	336	82	11	7
Secondary Level	437	429	75	20	6

[a] Number of cases in which teacher's assessment of acceptance available.

students, but tends not to mix well with other students, or tends to mix mainly with other Aboriginal students), and not accepted (student is not well accepted and does not mix well with other students). These categories were subsequently applied in the secondary school survey and teachers were asked to rate students' acceptance according to these categories.

The percentage of primary and secondary students classified in each category on the basis of teacher comments or assessments is shown in Table 2.18. At both the primary and secondary level the majority of Aboriginal students were considered by their teachers to be well accepted by their classmates. There was some trend for a higher proportion of responses in the qualified acceptance category at the secondary level than at the primary level, but only a small proportion of students at both primary and secondary level were considered by their teachers to be not well accepted. It should however be noted that in the case of the primary school survey comments on acceptence were available for only 34 per cent of the total sample.

Behaviour and adjustment

In the primary school survey an analysis was also made of comments relating to students' behaviour and adjustment at school. These comments were classified into three broad categories: good behaviour and adjustment (well behaved, co-operative, able to take responsibility, friendly and well adjusted), uncertain (usually reference to shyness, timidity, immaturity, or difficulty in communicating), and poor behaviour and adjustment (aggressive, not well adjusted, disturbing influence, disruptive, behaviour problem). A specific question on behaviour and adjustment was not included in the secondary survey.

The percentage of comments classified in each of these categories in the primary school survey is shown in Table 2.19. Comments relating to behaviour and adjustment were available for 40 per cent of the primary school sample.

Table 2.19 Teacher's Assessment of Behaviour and Adjustment: Percentage of Primary School Students in each Category

	Total Sample	N[a]	Good Behaviour and Adjustment	Uncertain	Poor Behaviour and Adjustment
Primary Level	807	320	58	22	20

[a] Number of cases in which teacher's assessment of behaviour and adjustment available.

The comments made by the teachers on behaviour and adjustment suggest that the majority of Aboriginal primary school children are well behaved and well adjusted in school. Behaviour problems of one kind or another were reported in about 20 per cent of cases, and in a further 22 per cent of cases children were described as shy, timid, withdrawn, or having difficulty in communicating. While it is difficult to draw any conclusions from this analysis of spontaneous comments, and while no comparable data are available for non-Aboriginal children, it would seem that the proportion of Aboriginal children described as shy or as having difficulty in communicating is higher than would be expected in the non-Aboriginal population. This conclusion is supported by the results of the ACER literacy and numeracy study (Bourke and Parkin, 1977), where it was found that while only 5 per cent of Australian students at age 10 and age 14 were described by their teachers as being extremely timid or shy or tending to isolate themselves from others, 20 per cent of 10-year-old Aboriginal students and 10 per cent of 14-year-old Aboriginal students attending normal schools were described in these categories. At the 10-year-old level a higher proportion of Aboriginal students were also described as frequently demanding attention or being unable to co-operate with peers (15 per cent of Aboriginal students as compared with 7 per cent of Australian students), but this trend was not found at the 14-year-old level, where in fact a lower proportion of Aboriginal students attending normal schools were classified in these categories (2 per cent of Aboriginal students as compared with 7 per cent of Australian students).

These categories in the ACER literacy and numeracy study would correspond roughly to our category of 'poor behaviour and adjustment', while the categories referring to extreme shyness or timidity or isolation from others would correspond roughly to our category of 'uncertain'. These figures therefore suggest a higher proportion of behaviour problems among Aboriginal students than in the population as a whole, particularly at the primary school level.

Other comments made by teachers in the primary school survey referred mainly to special abilities, sport being the most frequently mentioned special ability. A specific question in the secondary school survey also indicated a high proportion of Aboriginal students rated as very good at sport. Art and craft, music and creative activities were also mentioned in some cases. Special difficulties or physical defects were referred to in 32 cases, a speech defect being the most frequently mentioned difficulty (14 cases). Other difficulties mentioned were language difficulties, hearing difficulties, or physical conditions such as epilepsy. Lack of family support or poor personal hygiene and cleanliness were mentioned in a few cases only, suggesting that these problems are not widespread among Aboriginal children.

Degree of Aboriginality

Teachers were asked to classify the Aboriginal students according to their degree of Aboriginality. Three categories were distinguished: students of predominantly Aboriginal descent, students of mixed descent, and students of predominantly European descent. While it is recognized that the categorization of students into these three cateogires is to some extent arbitrary and subjective, it was thought necessary to obtain some information on this question because of the great diversity of the Aboriginal population of Victoria.

The percentage of students at the primary and secondary level classified in each of these categories is shown in Table 2.20. The percentage of students classified in each category at the primary and secondary level was similar, suggesting some consistency of teacher judgments according to the categories identified. The majority of students were classified as of predominantly Aboriginal descent or of mixed descent, with about 20 per cent of students classified as of predominantly European descent.

Table 2.20 Teacher's Assessment of Degree of Aboriginality: Percentage of Students Classified in each Category

	Total Sample	N[a]	Of Predominantly Aboriginal Descent	Of Mixed Descent	of Predominantly European Descent
Primary Level	807	750	44	35	22
Secondary Level	437	415	45	38	17

[a] Number of cases in which teacher's assessment of degree of Aboriginality available.

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Table 2.21 Teacher's Assessment of Integration of Student's Family in the General Community: Percentage of Cases in each Category

	Total Sample	N[a]	Fully Integrated	Partially Integrated	Segregated
Primary Level	807	669	47	45	8
Secondary Level	437	394	53	38	8

[a] Number of cases in which teacher's assessment of degree of integration available.

Integration of family

Teachers were also asked for information on the extent to which the Aboriginal student's family was integrated in the general community. Three categories were distinguished: fully integrated (family fully integrated in the general community), partially integrated (family living in the general community but tending to associate mainly with other Aboriginal families in the community), and segregated (family living in a segregated Aboriginal community either within or on the fringe of the general community or at some distance from the general community).

The percentage of cases classified in each category at the primary and secondary levels is shown in Table 2.21. The majority of Aboriginal families were described as fully or partially integrated in the general community. Only a small proportion of Aboriginal students (8 per cent) were stated to come from families living in segregated communities.

Socio-economic background

Information on father's occupation was obtained as an indication of the socio-economic background of the student. In cases where the father was not living at home, teachers were asked to give the mother's occupation. Occupations were classified according to the Congalton scale for the primary survey (Congalton, 1969), and according to the Broom, Jones and Zubrzycki scale for the secondary survey (Broom, Jones and Zubrzycki, 1965). These classifications were then collapsed to give four main categories: professional and managerial, clerical or skilled, semi-skilled, and unskilled. The percentage of students at the primary and secondary level in each of these categories is shown in Table 2.22. It should be noted that these percentages are based only on the number of occupations classified. In a high proportion of cases in both the primary and secondary survey the father's occupation was not known or not classified. The census figures

Table 2.22 Father's Occupation: Percentage of Students in each Occupational Category

Occupational Category	Primary Level	Secondary Level	Aboriginal Male Workers (1966 Census)	Non-Aboriginal Male Workers (1966 Census)
Professional or Managerial	< 1	6	2	24
Clerical or Skilled	9	12	5	35
Semi-skilled	27	29	15	21
Unskilled	64	53	74	20
Total Number of Occupations Classified	492	233		
Total Sample	807	437		
Occupations Classified as a Percentage of Total Sample	61	53		

for the proportion of Aboriginal and non-Aboriginal male workers in each of these categories is also given. These figures are based on those given by Broom (1971).

The majority of students at both primary and secondary level came from semi-skilled or unskilled home backgrounds. Rather more students at the secondary level came from higher occupational backgrounds, but the proportion of children coming from professional, managerial, clerical or skilled backgrounds was still low. A comparison of these figures with the 1966 census figures for Aboriginal and non-Aboriginal male workers indicates that the proportion of Victorian Aboriginal students coming from semi-skilled or higher level occupational backgrounds is higher than would be expected for the Aboriginal population as a whole, but is still very much lower than would be expected for the non-Aboriginal population.

A further analysis of cases in which father's occupation was not classified was made. This is shown in Table 2.23. The high proportion of cases in which the parental occupation was described as 'home duties' suggest a high proportion of one-parent families in the Aboriginal student population. Cases in which the father's occupation was unknown or no response was given and cases in which the occupation was stated as 'pensioner' could also include a number of one-parent families. Allowing for these cases it would seem that

Table 2.23 Analysis of Cases in which Father's Occupation was not Classified: Percentage of Cases in each Category

Occupations Not Classified	Primary Level Number	Primary Level Per Cent of Total Sample	Secondary Level Number	Secondary Level Per Cent of Total Sample
Home Duties	155	19	76	17
Unemployed	21	3	12	3
Pensioner	61	8	27	6
Unknown or No Response	78	10	89	20
Total Not Classified	315	39	204	47
Total Sample	807	100	437	100

about a quarter of Aboriginal students come from one-parent home backgrounds. This proportion would be very much higher than in the non-Aboriginal population.

Home circumstances

A direct question on home circumstances was not included in the questionnaire. However, this information was often given spontaneously by schools, particularly in the case of students living in an institution, with foster parents, or with relatives. This information was therefore noted, and in the case of the secondary school survey an analysis was made of the home circumstances of the students. In cases where the father's occupation was given, the student was assumed to be living with both parents. If the mother's occupation was given, the student was assumed to be living with the mother only. In cases where neither father's occupation nor mother's occupation was given and no other information was provided, home circumstances were classified in the category 'no information'.

The number of secondary students in country and metropolitan areas in each of the home circumstances categories distinguished is shown in Table 2.24. The proportion of Aboriginal secondary students living in one-parent families, with relations or foster parents, or in an institution was much higher than would be expected in the general community. Only just over half the sample of Aboriginal secondary students were living with both parents. In comparison, the census figures for 1966 indicate that in Victoria over 90 per cent of families with children under sixteen years of age are two-parent families

Table 2.24 Home Circumstances: Percentage of Secondary Students in each Category

Home Circumstance	Metropolitan Secondary Students	Country Secondary Students	Total Secondary Students
Both Parents	47	56	53
Mother only	18	16	17
Relations	3	6	6
Foster Parents	16	7	9
Institution	4	3	3
School College	0	4	3
No Information	13	7	9
Total N	109	328	437

(Commonwealth Bureau of Census and Statistics, 1972). The proportion of students living with relatives tended to be higher in country areas than in the metropolitan area, while the proportion of students living with foster parents was higher in the metropolitan area than in country areas. A small proportion of Aboriginal students were living in an institution or in a school college. Those living in school colleges were mainly Aboriginal students from missions in the Northern Territory who were boarding at church schools.

It should be noted that in the case of Aboriginal students living with foster parents, the occupation given was that of the foster father. This may account to some extent for the higher proportion of cases classified in the higher occupational categories in the secondary school sample as compared with the primary school sample and with the 1966 figures for Aboriginal male workers. Of the 15 cases in which father's occupation was ranked in the professional or managerial category, seven were cases in which the occupation ranked was that of the foster parent.

Summary

The total number of Aboriginal students surveyed was 1244, with just over 800 students in primary schools and 437 students in secondary schools. This number is estimated to be 80 to 90 per cent of the total Aboriginal school population in Victoria.

The majority of Aboriginal students attend schools in the country. Of the students surveyed about three-quarters were in country schools and one-quarter were in metropolitan schools. Of those attending schools in the country, the majority were in the northern and eastern areas of Victoria. Of those attending schools in the metropolitan area, the majority of primary school students were attending schools in the northern and western suburbs, but the majority of secondary school students were attending schools in the northern, eastern and south-eastern suburbs.

The majority of Aboriginal students attend state schools. Of the secondary students surveyed, approximately 60 per cent attended state high schools and 30 per cent attended state technical schools. A small proportion of Aboriginal secondary students attended Catholic schools, but relatively few attended other independent schools. At the primary level 97 per cent of the sample attended state schools and 3 per cent attended Catholic schools.

The distribution of students by grade level showed some tendency for a decrease in numbers at the primary level from Grade 1 to Grade 6. This decrease probably reflects the age trend of the population, with increasing numbers at the lower age levels. However the number of children at the Prep level was lower than the number of children at the Grade 1 and Grade 2 levels. This trend was found in the country population but not in the metropolitan population. It is possible that some country primary schools do not have a Prep grade and school beginners are therefore placed directly in Grade 1.

At the secondary level the numbers of students in Form 1, Form 2, and Form 3 were consistent with the numbers at the upper primary level, but at Form 4 and Form 5 there was a marked drop in the number of students. In country schools this drop was most marked from Form 3 to Form 4, but in metropolitan schools the drop was more marked from Form 4 to Form 5. Relatively few Aboriginal students continued into Form 5 and Form 6.

The average age of the Aboriginal students at each grade or form level tended to be slightly higher than the Victorian average, particularly at the secondary level. There was some trend for the average age of country students to be slightly higher than the average age of metropolitan students, but these differences were not very marked and not consistent at the secondary level.

The school attendance of the majority of the Aboriginal students was regarded by their teachers as regular, with some trend for a higher proportion of irregular attenders at the secondary level. However, the proportion of Aboriginal students with prolonged absences (over 20 days) was higher than would be expected for the Australian student population as a whole.

The mobility rate for Aboriginal students was not particularly high, with the majority of Aboriginal students having attended one school only at both the primary and secondary level. Only a small proportion of students had attended more than two primary schools or more than two secondary schools, but there was some trend for a higher proportion of primary students to have attended more than one primary school.

A number of Aboriginal students at both primary and secondary level were reported to have repeated a grade or a form. While the percentage of students repeating a grade or a form was relatively low (9 per cent at the primary level and 6 per cent at the secondary level), these percentages are higher than for Victoria as a whole, just over 2 per cent of Victorian secondary students being reported to have repeated a form in 1972.

Teacher ratings of school performance indicated a higher proportion of Aboriginal students rated in the below average categories than in the above average categories, with approximately half the Aboriginal students at both the primary and secondary levels rated in the below average categories and only 14 per cent of primary students and 10 per cent of secondary students rated in the above average categories.

In the case of the secondary students, teachers' assessments of future potential indicated that over half the students were assessed as capable of undertaking some form of post-secondary education or training, while about 20 per cent were assessed as capable of semi-skilled or unskilled work only. The remainder of the Aboriginal secondary students were assessed as capable of undertaking clerical or sales work. However, an analysis of the intentions of students leaving school at the end of the year indicated that only a quarter of the students assessed as capable of some form of post-secondary training intended to go on with further education or training. Of students aged 15 years or over, 37 per cent intended to leave school at the end of the year.

An analysis of teachers' comments in the primary school survey and responses to specific questions in the secondary school survey indicated that Aboriginal students' attitudes toward work appeared to be average, with the majority of students stated to have either a very good attitude to work or a fairly good attitude to work. A slightly higher proportion of students at the secondary level were stated to have a poor attitude toward work (33 per cent, as compared with 24 per cent at the primary school level). Teachers' comments or assessments also indicated that on the whole Aboriginal students appeared to be well accepted by their peers and well adjusted at school, although the proportion of primary school children stated to be either very shy or withdrawn or to have some type of behaviour problem appeared to be rather higher than might be expected for the primary school population as a whole. The sporting ability of Aboriginal primary students was quite frequently commented on, and a high proportion of secondary students were rated as very good at sport. Physical handicaps or other difficulties were mentioned in only a few cases.

The majority of the Aboriginal students were described by their teachers as being of predominantly Aboriginal descent or of mixed Aboriginal and European descent, with approximately 20 per cent of students being described as of predominantly European descent. The families of the Aboriginal students were in most cases described as fully integrated or partially integrated in the general community, and few of the Aboriginal students came from families living in segregated Aboriginal communities.

The socio-economic status of the Aboriginal students was low, with the majority of fathers' occupations ranked in the semi-skilled and unskilled categories. However, the proportion of rankings in the semi-skilled and higher occupational categories was higher for the Victorian students than for Aboriginal male workers as a whole, suggesting that the socio-economic status of Aboriginal students in Victoria is higher than that of Aboriginal students in general. There were however a high proportion of cases in which father's occupation was unknown or not classified, indicating some caution in the interpretation of these figures based only on cases in which father's occupation was actually known.

The number of cases in which mother's occupation only was given suggest a high proportion of one-parent families in the Aboriginal community, and the comments of teachers also indicate a relatively high proportion of Aboriginal students living with relatives, foster parents or in an institution.

The data from these surveys provide basic information on the total Aboriginal school population of Victoria. The findings do tend to confirm the commonly held view that Aboriginal students perform more poorly at school than non-Aboriginal students, are less regular attenders, are less likely to continue to the upper levels of the secondary school, and are more likely to leave school early. Nevertheless, they also indicate a high proportion of Aboriginal students whose school performance is rated as average or above average, whose school attendance is regular, and whose adjustment at school and attitude to work is good. These positive aspects of Aboriginal schooling should not be overlooked. The findings also indicate that Aboriginal students tend to come from a low socio-economic background and often from one-parent families or broken homes. These factors will undoubtedly affect their schooling and their attitudes to school.

These surveys provided the background against which the subsequent more detailed studies of school achievement and the factors related to school achievement and school leaving were undertaken. These studies are reported in the following chapters.

CHAPTER 3

THE PRIMARY SCHOOL TESTING PROGRAM

At the primary school level, a testing program was undertaken on samples of Aboriginal and non-Aboriginal students drawn from Grade 2, Grade 4 and Grade 6. The aim of this study was to obtain information on the school achievement of Aboriginal students at the primary level, and to look at the pattern of achievement from Grade 2 to Grade 6. The non-Aboriginal students were tested to provide a comparison group.

The tests used and the grade levels sampled in this study were the same as those used in a parallel study on the educational achievement of migrant children in Victoria (de Lemos, 1975), so that the achievement of the Aboriginal and non-Aboriginal students in this study can also be compared with the achievement of random samples of Australian and migrant students.

Description of the Study

Sample

The sample of Aboriginal students for the primary school testing program was drawn from schools with ten or more Aboriginal enrolments. At each of these schools, all Aboriginal children at the Grade 2, Grade 4 and Grade 6 levels were tested, together with an equal number of non-Aboriginal students from the same classes as the Aboriginal students. The non-Aboriginal students were selected at random from the class registers. This sampling procedure gave a total of 150 Aboriginal students, 54 at Grade 2, 49 at Grade 4 and 47 at Grade 6, together with an equal number of non-Aboriginal students at each grade level, drawn from a total of 19 schools. These 19 schools accounted for approximately half the Aboriginal enrolment at each of these grade levels.

This sampling procedure was decided on because the scattered nature of the Aboriginal population and the large number of schools with Aboriginal enrolments made it impractical to apply random sampling procedures. Restricting the sample to a limited number of schools was also more economic in terms of travelling and testing time than if a larger number of schools had been sampled, and these schools provided approximately half the total population at the required levels.

Description of the tests

A series of general ability and achievement tests were administered to all the students in the sample. The tests administered to the Grade 4 and the Grade 6 samples were the same, but a different battery of tests was administered to the Grade 2 sample.

The tests administered to the Grade 2 sample were as follows:

1 The Coloured Progressive Matrices (CPM)

The Progressive Matrices test was selected as a measure of non-verbal general ability. The Coloured Progressive Matrices (CPM), designed for children from the ages of five to ten years, was used for the Grade 2 group, while the Standard Progressive Matrices (SPM), which is appropriate for older children and for adults, was used for the Grade 4 and the Grade 6 groups.

The Progressive Matrices tests comprise a series of items made up of designs or patterns which have one part missing, and the subject has to select from six or eight alternatives the part that completes the design correctly. It is therefore a test of the subject's ability to see the relationships between the parts of a pattern and to complete the pattern correctly. This test has been widely used as a test of non-verbal intelligence or general ability, and has been applied to a number of different cultural groups. It is appropriate for children and for adults, and can be administered to persons with relatively little understanding of English, since the items are arranged in sets of increasing order of difficulty such that the first items of each set provide a demonstration of what is required and some practice in solving simple items.

2 The Metropolitan Achievement Tests: Primary I Battery

The Metropolitan Achievement Tests are a series of American achievement tests, the Primary I Battery being designed for administration in the second half of the Grade 1 year. These tests have been widely used in the United States, and were selected for use in this study and in the migrant study because no appropriate Australian tests were available for this level. American norms only are available for these tests (Durost *et al.*, 1959).

The Metropolitan tests are designed to assess the attainment of basic knowledge and skills at the various grade levels tested. The Primary I Battery comprises four sub-tests, the first three measuring important reading skills, and the fourth covering the fundamental concepts and skills taught in first grade arithmetic.

The four sub-tests are as follows:

Sub-test 1. Word Knowledge (MAT 1). This test measures the child's sight vocabulary or word recognition ability. Each item comprises a simple picture with four alternative words. The child is required to mark the word that corresponds to or describes the picture.

Sub-test 2. Word Discrimination (MAT 2). This test measures the child's ability to select an orally presented word from a group of words of similar configuration. This test therefore assesses both auditory and visual discrimination abilities. A word is read out to the child, and the child has to mark the correct word from four alternatives.

Sub-test 3. Reading (MAT 3). This test consists of two parts. In the first part, the child is presented with a picture and three alternative sentences, and has to choose from these the sentence that best describes the picture. In the second part, the child is presented with a simple passage or riddle, which is followed by a series of questions designed to assess the child's reading comprehension. In each case the child has to choose the correct answer from three alternatives.

Sub-test 4. Arithmetic Concepts and Skills (MAT 4). This test assesses the child's mastery of basic numerical and quantitative concepts. The first part comprises numerical problems read aloud to the child, and the second part comprises simple computation items that the child completes on his own.

The tests administered to the Grade 4 and Grade 6 samples were as follows:

1 The Standard Progressive Matrices (SPM)

This is the standard version of the Progressive Matrices test, suitable for administration to children from the age of ten years. It parallels the Coloured Progressive Matrices administered to the Grade 2 group, and has been described above.

2 Test of Words Used in Social Studies, Form Y (SSW)

This was a test developed for the Victorian Primary Schools Testing Program, and is designed to assess the student's understanding of essential words and concepts in the social studies area. The test was normed in 1970 on a sample of Victorian primary school children (Renehan and Wilkes, 1973).

3 Test of Comprehension in Social Studies (SSC)

The Test of Comprehension in Social Studies was also developed for the Victorian Primary Schools Testing Program. The test consists of blocks of information, each followed by a series of comprehension questions. The blocks of information contain verbal material, graphs, maps, photographs and reproduced documents. This material was adapted from sources which included children's books, text books, newspapers, magazines and tourist pamphlets, and is of the kind typically encountered in social studies courses.

The test was normed in 1970 on a sample of Victorian primary school children (Renehan and Wilkes, 1973).

4 The Listening Test (Form Y), from the New South Wales Basic Skills Battery

This test is made up of a selection of passages followed by a series of questions on each passage. The passages were selected to sample as widely as possible from the types of listening situations common to the primary school child. Each passage is read aloud to the class, and a series of questions are then asked. The students select the correct answer from a number of alternatives (ACER, 1964).

The listening test was first normed in New South Wales in 1964, and was also normed in Victoria in 1970 on a sample of Victorian primary school children (Renehan and Wilkes, 1973).

5 The Computation Test (AM 4)

The computation test (AM 4, Part IV) was selected from the AM series of the ACER Mathematics Tests. It is a test of computation skills, and is completely non-verbal, all items being presented in the form of equations using only numbers and conventional mathematical symbols.

This test was normed in Victoria in 1971 on a sample of Victorian primary school children (ACER, 1972).

6 The Money Test (AM 5)

The money test (AM 5) was also selected from the AM series of the ACER Mathematics Tests. It is a test of applied arithmetic and mathematical skills, and includes problems related to making change, identification of notes, comparison of costs and computation with money.

This test was normed in Victoria in 1971 on a sample of Victorian primary school children (ACER, 1972).

Testing procedure

The students in the sample were tested in the third term of 1971. All the students were tested by an ACER research assistant, who travelled to each school to undertake the testing. The Aboriginal and non-Aboriginal students at each grade level were tested in a group. The only test which was individually administered was the Coloured Progressive Matrices. All the other tests administered were group tests. In one case, at the school's request, all the students in the relevant grade levels were tested.

Characteristics of the sample

Distribution. The distribution of the Aboriginal sample by grade level and by area is shown in Table 3.1. The number of non-Aboriginal students is in each case the same as the number of Aboriginal students.

The majority of the students in the sample was located in northern Victoria. A number of students were also located in eastern Victoria, particularly at the Grade 6 level, with smaller numbers in the metropolitan area and in western Victoria.

Table 3.1 Distribution of the Sample by Grade Level and by Area: Aboriginal Students Only

Area	Number of Schools	Number of Students			
		Grade 2	Grade 4	Grade 6	Total
Metropolitan	3	6	6	3	15
Western Victoria	2	4	5	4	13
Northern Victoria	9	35	29	26	90
Eastern Victoria	5	9	9	14	32
Total	19	54	49	47	150

Sex. The distribution of the sample according to sex is shown in Table 3.2. There were some differences in the distribution of boys and girls in the Aboriginal and the non-Aboriginal samples. There were a higher proportion of boys in the Aboriginal sample, particularly at the Grade 4 level, while in the non-Aboriginal sample the total number of boys and girls was equal, with rather more girls at the Grade 2 and Grade 4 levels, but more boys at the Grade 6 level.

Table 3.2 Distribution of the Sample According to Sex: Number of Boys and Girls in each Group

	Aboriginal Group			Non-Aboriginal Group		
Grade Level	Boys	Girls	Total	Boys	Girls	Total
Grade 2	25	29	54	26	28	54
Grade 4	30	19	49	22	27	49
Grade 6	26	21	47	27	20	47
Total	81	69	150	75	75	150

The difference in the number of boys and girls in the two groups is due to the fact that the non-Aboriginal students were selected at random from the same classes as the Aboriginal students, and no attempt was made to match for sex or for any other variable.

Age. The average age and the age range of the Aboriginal and the non-Aboriginal students at each grade level is shown in Table 3.3. The average age was taken as at the commencement of the testing program (1 October, 1971).

The average age of the Aboriginal students was consistently higher than the average age of the non-Aboriginal students at each grade level, and these differences were in all cases significant (Grade 2, $t = 1.97$, $p < .05$; Grade 4, $t = 3.48$, $p < .01$; Grade 6, $t = 3.62$, $p < .01$).

The age range of the Aboriginal students was also greater than that of the non-Aboriginal students, and a higher proportion of Aboriginal students fell outside the expected age range for students at their particular grade level. The expected age range was calculated on the assumption that children enter school at the beginning of the year if they are five years of age or if they turn five on or before 30 June, as is permitted by the Victorian school entry requirements, and as is common practice in Victoria. The total number of Aboriginal students older than expected was 56 (12 at Grade 2, 20 at Grade 4 and 24 at Grade 6), while the total number of non-Aboriginal students older than expected was 21 (4 at Grade 2, 8 at Grade 4 and 9 at Grade 6).

These figures indicate a high proportion of Aboriginal students older than expected at each grade level, with this number increasing from Grade 2 to Grade 6. The number of non-Aboriginal students older than expected is lower, but is still higher than would be expected for Victoria as a whole. The reason for the students being older than expected could be either that they entered school later than normal, or that they repeated a grade.

Table 3.3 Average Age and Age Range of Aboriginal and Non-Aboriginal Students in the Sample

Grade Level	Aboriginal Group			Non-Aboriginal Group		
	N	Mean Age	Age Range	N	Mean Age	Age Range
Grade 2	54	8:1	7:0- 9:5	54	7:11	7:0- 8:4
Grade 4	49	10:4	9:3-11:9	49	10:0	9:1-11:5
Grade 6	47	12:5	11:2-14:5	47	12:0	11:0-13:7

Grades repeated. Information on whether or not the students had repeated a grade was also obtained. A total of 31 of the Aboriginal students were said to have repeated a grade, twelve at the Grade 2 level, eight at the Grade 4 level, and eleven at the Grade 6 level. Of these, three students were stated to have repeated two grades. In the non-Aboriginal group a total of 14 students were stated to have repeated a grade, two at the Grade 2 level, eight at the Grade 4 level and four at the Grade 6 level. The number of Aboriginal students repeating a grade was therefore higher than the number of non-Aboriginal students, but in both groups the proportion of students stated to have repeated a grade is considerably higher than would be expected for the Victorian population as a whole. This is probably due to the nature of the sample and the schools from which the sample was selected, these being mainly schools in country areas with a high concentration of Aboriginal students.

Attendance. Information on the number of days that students were absent in the first two terms of 1971 was obtained for the Aboriginal and non-Aboriginal students in the sample. The average number of days absent and the percentage of students with varying periods of absence are shown in Table 3.4.

The average number of days absent was higher for the Aboriginal students than for the non-Aboriginal students at all grade levels. These differences were significant at the Grade 2 and the Grade 6 levels (Grade 2, $t = 2.76$, $p < .01$; Grade 6, $t = 3.45$, $p < .01$), but not at the Grade 4 level ($t = 1.60$).

A higher proportion of the non-Aboriginal students were regular attenders (absent no more than five days in the first two terms of the year), while a higher proportion of the Aboriginal students were less regular attenders, with a number of students absent for more than ten days, and a relatively high proportion of students absent for over 20 days. Relatively few of the non-Aboriginal students were absent for more than 20 days.

Table 3.4 Average Number of Days Absent and Percentage of Children in Categories According to Number of Days Absent

Group	N	Average Number of Days Absent	Percentage of Children Absent: 0 to 5 Days	6 to 10 Days	11 to 20 Days	21 to 30 Days	Over 30 Days
Aboriginal							
Grade 2	54	12.7	36	32	16	4	14
Grade 4	49	9.1	50	21	23	2	4
Grade 6	47	11.5	28	41	15	11	4
Non-Aboriginal							
Grade 2	54	6.6	66	16	16	2	2
Grade 4	49	6.2	56	27	10	4	2
Grade 6	47	4.1	67	25	8	0	0

The attendance of the Aboriginal students was therefore clearly less regular than the attendance of a random sample of non-Aboriginal students drawn from the same classes as the Aboriginal students.

Socio-economic status. The socio-economic status of the students was determined on the basis of the father's occupation, which was ranked according to the Congalton scale (Congalton, 1969). The Congalton scale ranks occupations in Australia on the basis of status and prestige. It contains seven categories ranging from 1 (highest status occupations) to 7 (lowest status occupations). The number of occupations ranked in each category on this scale in the Aboriginal and the non-Aboriginal groups is shown in Table 3.5.

From Table 3.5 it is clear that virtually all the Aboriginal students in this sample came from unskilled or semi-skilled backgrounds. The non-Aboriginal students, on the other hand, came from a greater variety of backgrounds, with a small proportion from higher professional or managerial backgrounds (Categories 1 and 2), a substantial proportion from lower professional, clerical or skilled backgrounds (Categories 3, 4 and 5), and about half the sample from semi-skilled or unskilled backgrounds (Categories 6 and 7).

In Table 3.6 the total percentage of Aboriginal and non-Aboriginal students in each of the Congalton categories is compared with the percentage in each category of a random sample of Australian children from Grades 2, 4 and 6 attending Melbourne schools. These figures were taken from the study on the educational achievement of migrant children (de Lemos, 1975).

Table 3.5 Socio-economic Status: Number of Students in each Category According to Congalton's Ranking of Father's Occupation

Group	N	Congalton Categories 1 Higher Professional	2 Managerial	3 Lower Professional	4 Clerical	5 Skilled	6 Semi-skilled	7 Unskilled	Not Classified
Aboriginal									
Grade 2	54	0	0	0	0	1	14	21	18
Grade 4	49	0	0	0	0	1	10	22	16
Grade 6	47	0	0	0	0	1	18	17	11
Non-Aboriginal									
Grade 2	54	1	1	10	10	7	12	9	4
Grade 4	49	0	3	4	6	8	14	9	5
Grade 6	47	2	2	4	5	11	15	4	4

The proportion of non-Aboriginal students in the unskilled category is somewhat higher in the Aboriginal study than in the Melbourne sample, but otherwise the distribution of the non-Aboriginal sample in the socio-economic categories of the Congalton scale is similar to that of the Melbourne sample. The socio-economic status of the Aboriginal students is clearly much lower than that of the non-Aboriginal sample and the Melbourne sample.

It should also be noted that in a high proportion of cases in the Aboriginal sample the father's occupation was not classified. In the majority

Table 3.6 Percentage of Aboriginal and non-Aboriginal Students in each Category Compared with a Random Sample of Australian Students Attending Melbourne Schools

Group	Number of Occupations Classified	Congalton Categories 1 Higher Professional	2 Managerial	3 Lower Professional	4 Clerical	5 Skilled	6 Semi-skilled	7 Unskilled
Aboriginal	105	0	0	0	0	3	40	57
Non-Aboriginal	137	2	4	13	15	19	30	16
Random sample of Australian children attending Melbourne schools (de Lemos, 1975)	156	3	7	15	17	21	29	8

Table 3.7 Correlations Between Background Variables: Aboriginal and Non-Aboriginal Groups

	Aboriginal Group			Non-Aboriginal Group		
Background Variables	Father's Occupation	Sex F=1 M=2	Age	Father's Occupation	Sex F=1 M=2	Age
Grade 2						
Sex	-.14			-.15		
Age	-.03	.16		-.21	-.04	
Days Absent	-.21	-.13	.29*	-.01	-.22	.11
Grade 4						
Sex	-.02			-.03		
Age	.03	.07		-.06	.22	
Days Absent	.10	-.08	.27	.18	-.22	-.18
Grade 6						
Sex	-.36*			-.19		
Age	.40*	-.05		.04	.03	
Days Absent	.13	.24	.12	-.08	.01	.04

* Significant at .05 level

of these cases the occupation given was 'home duties' (40 out of 45 cases), indicating that it was a one-parent family with the mother only living at home. In four cases the occupation given was 'pensioner', and there were two other cases in which there was no information on father's occupation.

In the non-Aboriginal sample there were thirteen cases in which father's occupation was not classified. In twelve cases the occupation given was 'home duties', indicating a one-parent family, and in one case there was no information on father's occupation.

Correlations between background variables. Correlations between the various background variables were calculated for the Aboriginal and the non-Aboriginal groups. These are shown in Table 3.7.

In the Aboriginal group there was a significant correlation at the Grade 2 level between age and number of days absent, the older children being more frequently absent. At the Grade 6 level there was a significant correlation between father's occupation and sex, indicating that the girls were more

Table 3.8 Results of the Study: Mean Scores, Standard Deviations and Results of t-tests

Test and Grade Level	Aboriginal Group		Non-Aboriginal Group			
	Mean	SD	Mean	SD	t-value	Significance
Grade 2	N=54		N=54			
CPM	17.6	4.2	20.0	4.8	2.78	$p < .01$
MAT 1	26.2	8.4	30.6	6.0	3.12	$p < .01$
MAT 2	25.4	8.2	30.1	6.9	3.18	$p < .01$
MAT 3	23.2	9.8	32.2	10.3	4.66	$p < .001$
MAT 4	36.7	10.0	48.1	10.9	5.69	$p < .001$
Grade 4	N=49		N=49			
SPM	19.6	7.8	24.9	9.4	3.06	$p < .01$
SSW	9.8	4.0	12.8	6.4	2.82	$p < .01$
SSC	13.8	6.3	18.5	7.8	3.21	$p < .01$
List	19.2	5.9	24.3	8.5	3.34	$p < .01$
AM 4	11.3	9.0	17.8	9.5	3.45	$p < .01$
AM 5	10.5	5.5	14.4	6.0	3.35	$p < .01$
Grade 6	N=47		N=47			
SPM	29.2	9.4	34.8	8.2	3.04	$p < .01$
SSW	15.4	7.5	22.3	8.9	4.01	$p < .001$
SSC	16.2	7.1	23.7	10.9	3.92	$p < .001$
List	22.8	7.0	27.8	9.4	2.85	$p < .01$
AM 4	21.7	14.4	34.5	10.9	4.83	$p < .001$
AM 5	15.0	5.9	20.6	5.0	4.95	$p < .001$

likely to come from semi-skilled home backgrounds and the boys from unskilled home backgrounds, and also a significant correlation between father's occupation and age, the older children tending to come from the lower occupational background.

There were no significant correlations between the background variables in the non-Aboriginal group.

Results of the Study

Mean scores

The mean scores of the Aboriginal and non-Aboriginal groups at each grade level on each of the tests administered are shown in Table 3.8. The results of t-tests applied to test the significance of these differences are also shown.

The non-Aboriginal students scored significantly higher than the Aboriginal students on all the tests administered. At the Grade 2 level the differences tended to be greater on the reading and arithmetic tests (MAT 3 and MAT 4), while at the Grade 6 level the differences tended to be greater on the social studies word knowledge and comprehension tests (SSW and SSC), and on the arithmetic tests (AM 4 and AM 5).

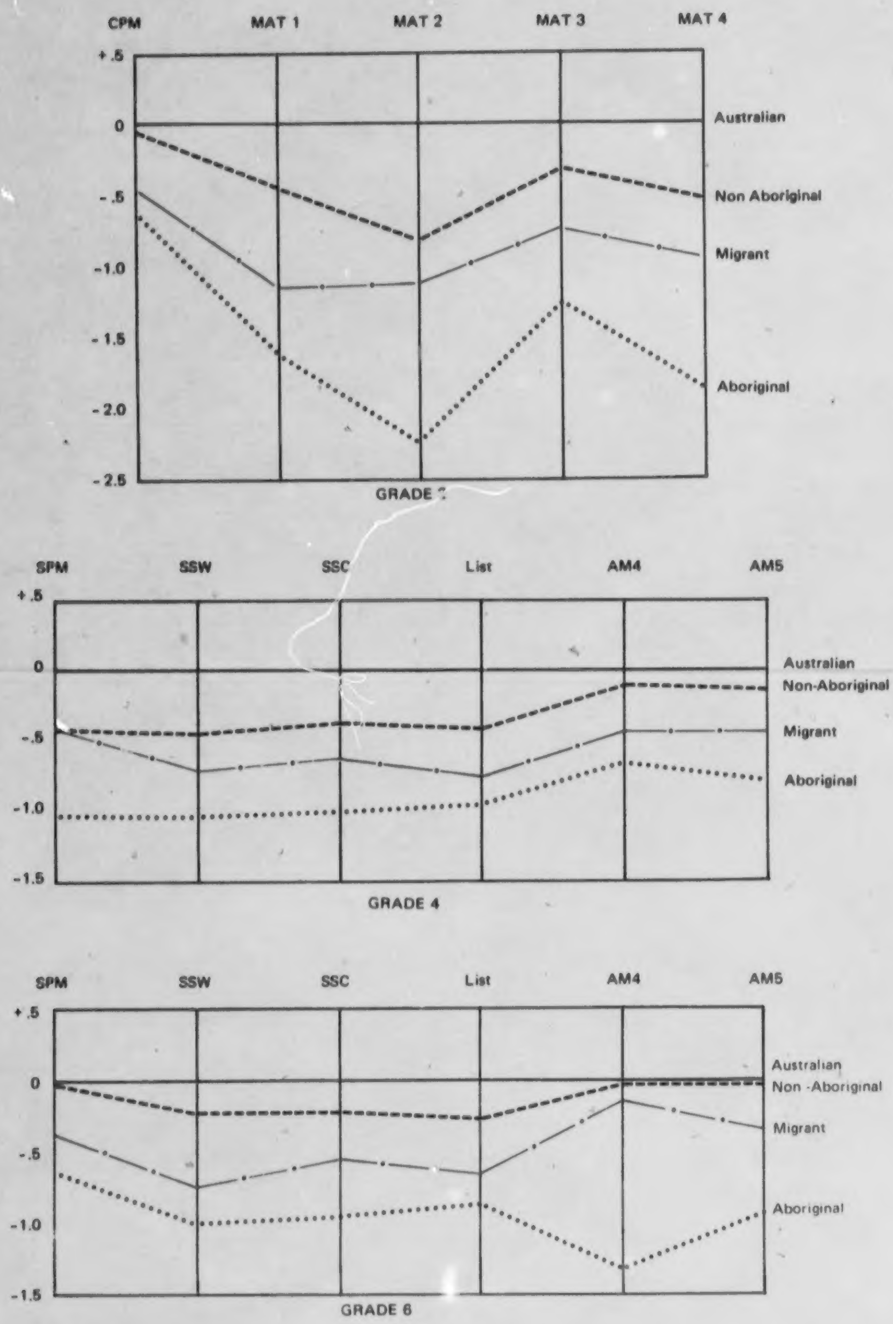

Figure 3.1 Comparison of Standard Scores: Aboriginal and non-Aboriginal Samples Compared with Random Samples of Australian and Migrant Children Attending Melbourne Schools

Comparisons with Melbourne samples of Australian and migrant children

The mean scores of the Aboriginal and non-Aboriginal groups at each grade level were compared with the mean scores of random samples of Australian children and migrant children from non-English speaking backgrounds attending schools in Melbourne. For this purpose the mean scores were converted to standard scores, the Australian group serving as the reference group with a standard score of zero. The figures for the Australian and migrant groups were taken from the study of the educational achievement of migrant children (de Lemos, 1975). These results are shown in Figure 3.1.

The mean scores of the non-Aboriginal comparison group in this study tended to be somewhat below the mean scores of the random sample of Australian children attending Melbourne schools, particularly at the Grade 2 and Grade 4 levels. This suggests that the non-Aboriginal comparison group is not a representative sample of non-Aboriginal children. This is to be expected, since this sample was drawn from schools with a concentration of Aboriginal students, and would therefore include a higher proportion of country schools and a higher proportion of schools from working-class areas than would be expected in a representative sample.

The mean scores of the Aboriginal students were consistently below the mean scores of the migrant children from non-English speaking backgrounds. These differences tended to be greater at the Grade 2 level than at the Grade 4 and Grade 6 levels. The mean scores of the Aboriginal and migrant children were consistently below those of the Australian and non-Aboriginal groups.

The mean scores of the Australian group and the non-Aboriginal comparison group on the Progressive Matrices tests tended to be similar at the Grade 2 and Grade 6 levels, but at the Grade 4 level the mean score of the non-Aboriginal group was lower than that of the Australian group and close to that of the migrant group. The mean score of the Aboriginal children on the Progressive Matrices test was relatively lower at the Grade 4 level than at the Grade 2 and Grade 6 levels.

At the Grade 2 level the differences between the Aboriginal group and the other groups tended to be greater on the word discrimination and arithmetic tests than on the other tests. The pattern of differences on the language -

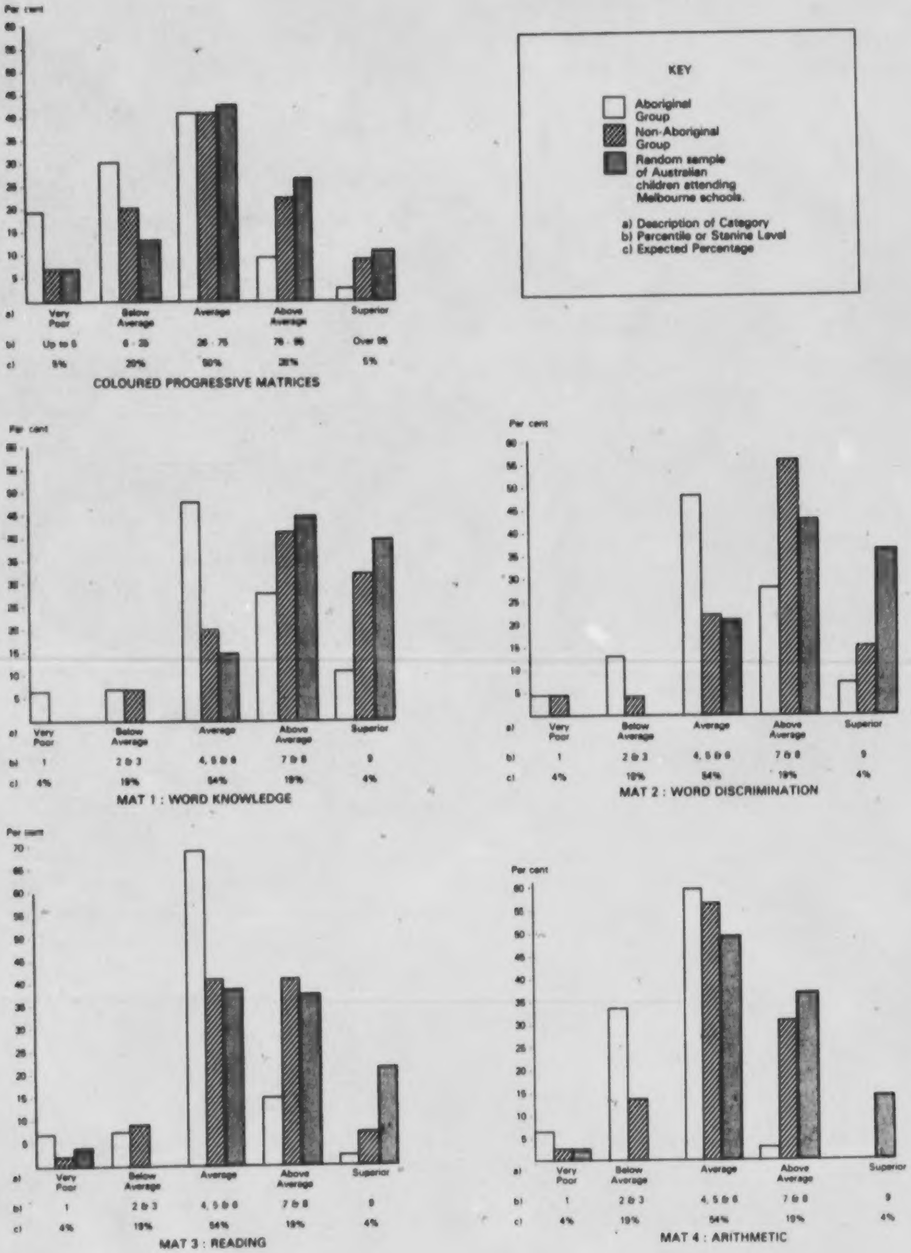

Figure 3.2 Distribution of Scores According to Stanine or Percentile Categories: Grade 2

based achievement tests was similar at the Grade 4 and Grade 6 levels, but differences on the arithmetic tests showed a different pattern from Grade 4 to Grade 6. In the case of the migrant group the differences on the arithmetic tests tended to decrease from Grade 4 to Grade 6, whereas in the case of the Aboriginal group the differences on the arithmetic tests tended to increase from Grade 4 to Grade 6, particularly on the computation test.

Distribution of scores

The mean scores of the Aboriginal and non-Aboriginal students indicate clearly that the Aboriginal students are performing at a lower level than the non-Aboriginal students, and also at a lower level than random samples of Australian children and migrant children from non-English speaking backgrounds attending Melbourne schools. However, these scores do not in themselves tell us very much about the performance of Aboriginal students. Of more importance is the distribution of scores, and how this distribution compares with that of other groups.

In order to examine the distribution of scores the percentage of Aboriginal and non-Aboriginal students falling into five main categories based on stanines or percentiles was calculated. In the case of the Progressive Matrices tests the categories were based on percentile levels, while in the case of the achievement tests the categories were based on stanine levels. The five main categories distinguished were as follows:

1 Very poor (stanine level 1, expected frequency 4 per cent; or percentile levels 0 to 5, expected frequency 5 per cent).

2 Below average (stanine levels 2 and 3, expected frequency 19 per cent; or percentile levels 6 to 25, expected frequency 20 per cent).

3 Average (stanine levels 4, 5 and 6, expected frequency 54 per cent; or percentile levels 26 to 75, expected frequency 50 per cent).

4 Above average (stanine levels 7 and 8, expected frequency 19 per cent; or percentile levels 76 to 95, expected frequency 20 per cent).

5 Superior (stanine level 9, expected frequency 4 per cent; or percentile levels over 95, expected frequency 5 per cent).

In the case of the Coloured Progressive Matrices test, the percentile levels are based on the standardization sample tested in Dumfries, Scotland in 1949 (Raven, 1965). In the case of the Standard Progressive Matrices test, the percentiles are based on Australian norms obtained from a standardization sample of Melbourne children tested in 1955 and 1956 (ACER,

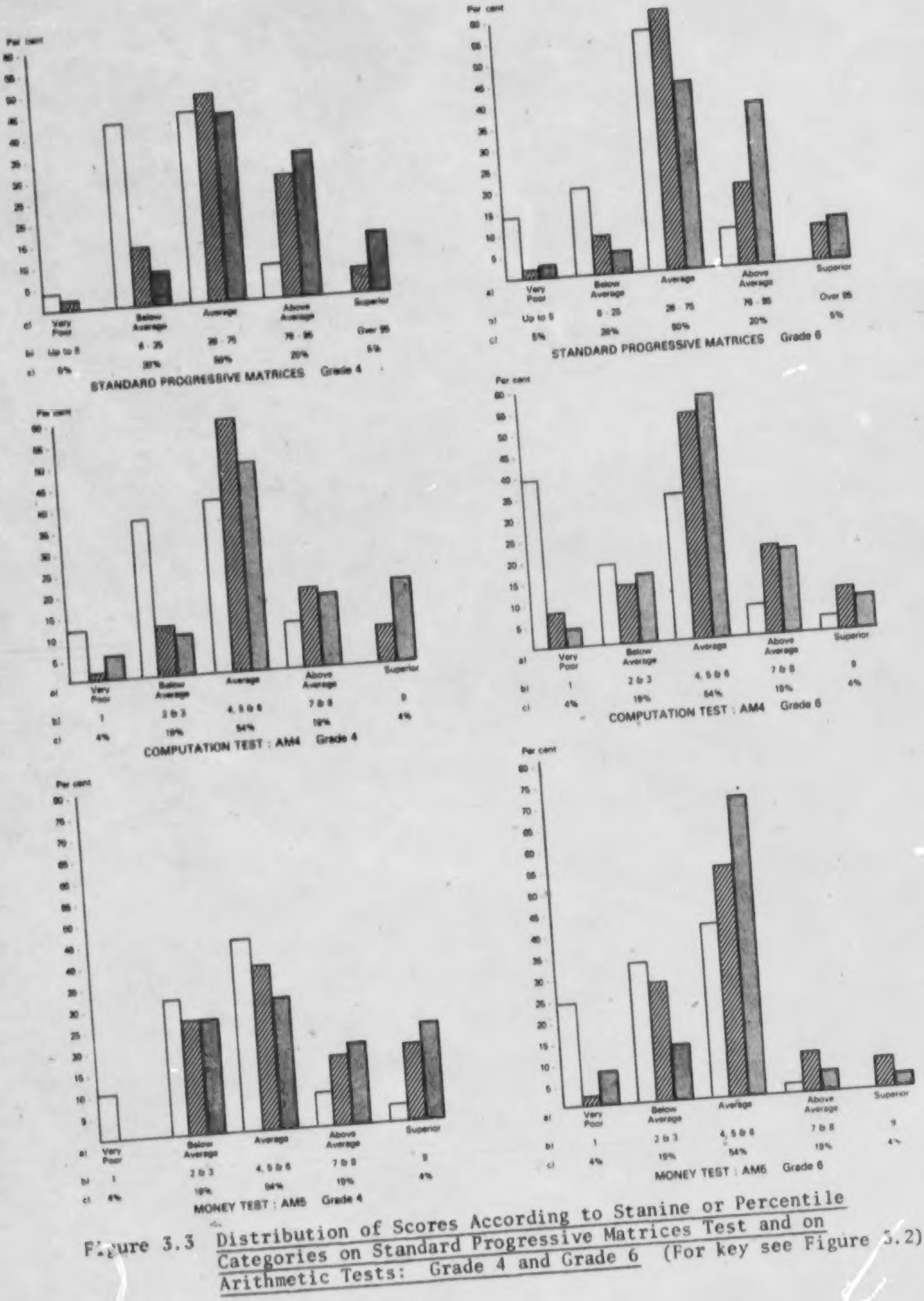

Figure 3.3 Distribution of Scores According to Stanine or Percentile Categories on Standard Progressive Matrices Test and on Arithmetic Tests: Grade 4 and Grade 6 (For key see Figure 3.2)

1958). In the case of the Metropolitan Achievement Tests used at the Grade 2 level, the stanines are those derived from the American Grade 1 norm sample, while in the case of the achievement tests used at the Grade 4 and Grade 6 levels the stanines are based on Victorian norms obtained from representative samples of Victorian children tested in 1970 and 1971.

The distribution of scores in the five categories distinguished for the Aboriginal group, the non-Aboriginal group, and a random sample of Australian children attending Melbourne schools (de Lemos, 1975) at each grade level is shown in Figure 3.2, Figure 3.3 and Figure 3.4. The distribution of scores at the Grade 2 level is shown in Figure 3.2, the distribution of scores on the Standard Progressive Matrices test and on the arithmetic tests for the Grade 4 and Grade 6 groups is shown in Figure 3.3, while the distribution of scores on the language-based achievement tests for the Grade 4 and Grade 6 groups is shown in Figure 3.4. The parallel tests for the Grade 4 and Grade 6 groups are presented opposite each other to show the trend on each test from Grade 4 to Grade 6.

The distribution of scores on the Coloured Progressive Matrices test at the Grade 2 level shows an approximately normal distribution for the Melbourne sample and the non-Aboriginal comparison group, with some trend for slightly more cases than expected in the above average categories. In the Aboriginal group the trend is for more cases than expected in the below average categories and fewer than expected in the above average categories. There are however a small proportion of Aboriginal children in the superior category and a number in the above average category.

On the Metropolitan Achievement Tests there are a much higher proportion of children than expected in the above average categories in the Melbourne group and in the non-Aboriginal comparison group. These stanine categories are based on the American Grade 1 norms, and these tests are therefore relatively easy for our Grade 2 samples. The Aboriginal children also show a higher proportion of cases than expected in the above average categories on the word knowledge and word discrimination tests, but on the reading test the scores of the Aboriginal children tend to concentrate in the average category, while on the arithmetic test the majority of scores are in the average or below average categories.

If the Metropolitan Achievement Tests are regarded more as criterion referenced tests than as norm referenced tests for our Grade 2 samples, and if the criterion of satisfactory performance is taken as performance at or above

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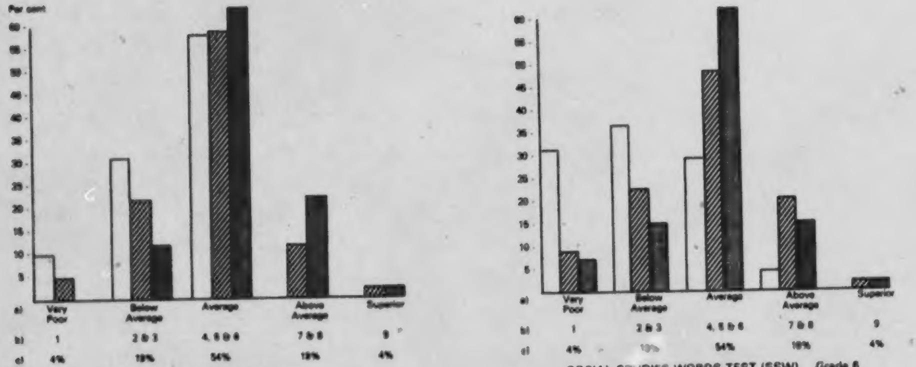
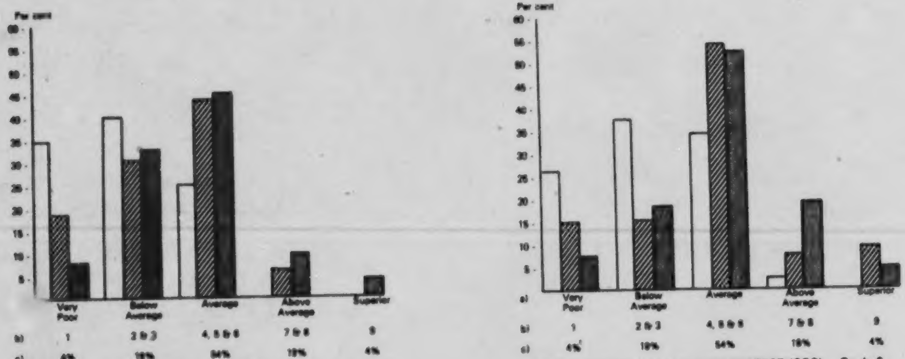


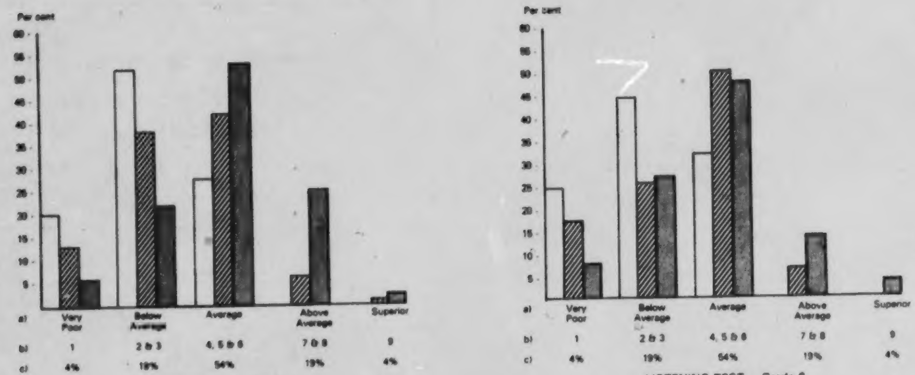
SOCIAL STUDIES WORDS TEST (SSW) Grade 4

SOCIAL STUDIES WORDS TEST (SSW) Grade 6



SOCIAL STUDIES COMPREHENSION TEST (SSC) Grade 4

SOCIAL STUDIES COMPREHENSION TEST (SSC) Grade 6



LISTENING TEST Grade 4

LISTENING TEST Grade 6

Figure 3.4 Distribution of Scores According to Stanine Categories on Social Studies Tests and Listening Test: Grade 4 and Grade 6 (For key see Figure 3.2)

the fourth stanine level on the American norms (i.e. in the average category or above), then it can be seen that all except a few of the Melbourne children in the case of the reading and arithmetic tests have achieved a satisfactory level of performance, but a number of children in the Aboriginal and non-Aboriginal groups have not achieved this level of performance, particularly on the arithmetic test where approximately 40 per cent of the Aboriginal children and 15 per cent of the non-Aboriginal children are achieving at a below average level.

Scores on the Standard Progressive Matrices test at the Grade 4 and Grade 6 levels show some trend for a higher proportion of cases than expected in the above average categories in the Melbourne sample and in the non-Aboriginal comparison group, but a higher proportion of cases than expected in the below average categories in the Aboriginal group. Relatively few Aboriginal children score in the above average category on the Standard Progressive Matrices test, and there are no Aboriginal children in the superior category.

Scores on the computation test follow approximately the expected distribution for the Melbourne and non-Aboriginal comparison groups, but there are a higher proportion of Aboriginal children than expected in the below average categories on this test. There is particularly a very marked increase in the number of Aboriginal children in the very poor category from Grade 4 to Grade 6, and at the Grade 6 level this category has in fact the highest proportion of cases in the Aboriginal sample (39 per cent). This indicates a lack of progress in the mastery of computation skills in the Aboriginal children from Grade 4 to Grade 6, and suggests that much more attention needs to be paid to the teaching of basic number skills to Aboriginal children at the upper primary level. A few of the Aboriginal children do however reach the above average or superior levels on the computation test.

On the money test the scores of the Aboriginal children also tend to concentrate in the average and below average categories, while the scores of the Melbourne and non-Aboriginal comparison groups tend to be distributed over the four higher categories at the Grade 4 level, and to concentrate in the average category at the Grade 6 level. There tends to be a higher proportion of cases in the below average categories than in the above average categories in the non-Aboriginal samples at the Grade 6 level on the money test, particularly in the case of the non-Aboriginal comparison group.

Table 3.9 Correlations between Test Scores: Grade 2

	Aboriginal Group N=54				Non-Aboriginal Group N=54			
	CPM	MAT I	MAT 2	MAT 3	CPM	MAT I	MAT 2	MAT 3
MAT I	.34*				.38**			
MAT 2	.19	.80**			.20	.35**		
MAT 3	.24	.66**	.71**		.55**	.80**	.31*	
MAT 4	.52**	.61**	.47**	.65**	.51**	.67**	.33*	.73**

* Significant at .05 level ** Significant at .01 level

On the language-based achievement tests (the social studies word knowledge test, the social studies comprehension test and the listening test) the scores of the Melbourne group tend to follow approximately the expected distribution, while the scores of the non-Aboriginal comparison group tend to show a rather higher proportion of cases than expected in the below average categories. The scores of the Aboriginal children tend to concentrate in the average and below average categories, and only a few of the Aboriginal children score in the above average categories on these tests. The only above average scores occur in the social studies word knowledge test and the social studies comprehension test at the Grade 6 level. There are no marked changes in the distribution of scores from Grade 4 to Grade 6.

The distributions of scores over the various tests indicate that relatively few of the Aboriginal children score in the above average categories, particularly on the language-based achievement tests. The majority of Aboriginal children score in the average or below average categories, but a relatively high proportion of Aboriginal children score in the very poor category, particularly on the achievement tests at the Grade 4 and Grade 6 levels. This distribution of scores for the Aboriginal group does indicate a disproportionate number of Aboriginal children with learning difficulties at the upper primary level.

Correlations between tests

The correlations between test scores for the Aboriginal and non-Aboriginal groups at each grade level are shown in Tables 3.9 to 3.11.

At the Grade 2 level the pattern of correlations between test scores for the Aboriginal and non-Aboriginal groups tends to be different. The word discrimination test (MAT 2) correlates more highly with the other

Table 3.10 Correlations between Test Scores: Grade 4

	Aboriginal Group					Non-Aboriginal Group				
	N=49					N=49				
Tests	SPM	SSW	SSC	LIST	AM 4	SPM	SSW	SSC	LIST	AM 4
SSW	.16					.41**				
SSC	.11	.51**				.51**	.72**			
LIST	.40**	.41**	.44**			.55**	.59**	.75**		
AM 4	.30*	.62**	.40**	.35*		.24	.47**	.37**	.44**	
AM 5	.30*	.60**	.57**	.51**	.74**	.56**	.71**	.72**	.59**	.65**

* Significant at .05 level ** Significant at .01 level

achievement tests in the Aboriginal group than in the non-Aboriginal group, but the correlations between the other achievement tests tends to be higher in the non-Aboriginal group. This suggests that the word discrimination test taps an important ability in the Aboriginal group but not in the non-Aboriginal group. This could be because the majority of the non-Aboriginal students are able to succeed on this test, so that this test is no longer discriminating for this group.

Correlations between the word discrimination test (MAT 2) and the Coloured Progressive Matrices test are not significant in either group, and in the case of the Aboriginal group the correlation between the Coloured Progressive Matrices test and the reading test (MAT 3) is also not significant. However, correlations between the Coloured Progressive Matrices test and the arithmetic test (MAT 4) are significant for both groups. This suggests that in the case of the Aboriginal group non-verbal ability

Table 3.11 Correlations between Test Scores: Grade 6

	Aboriginal Group					Non-Aboriginal Group				
	N=47					N=47				
Tests	SPM	SSW	SSC	LIST	AM4	SPM	SSW	SSC	LIST	AM4
SSW	.64**					.57 **				
SSC	.56**	.82**				.61 **	.84**			
LIST	.65**	.59**	.62**			.57**	.84**	.76**		
AM4	.46**	.70**	.61**	.68**		.53**	.77**	.66**	.62**	
AM5	.63**	.77**	.70**	.68**	.80**	.55**	.82**	.73**	.73**	.79**

** Significant at .01 level

as assessed by the Coloured Progressive Matrices test is more closely related to achievement in arithmetic than in reading, but in the non-Aboriginal group achievement in both reading and arithmetic is related to the level of non-verbal ability as assessed by the Coloured Progressive Matrices test.

There is some trend in both groups for the correlations between the achievement tests to be higher than the correlations between the achievement tests and the general ability test, excluding correlations between the word discrimination test (MAT 2) and the other achievement tests in the non-Aboriginal group.

At the Grade 4 level the correlations between the tests tend to be higher for the non-Aboriginal group than for the Aboriginal group. Correlations between the computation test (AM 4) and the other tests tend to be lower than the correlations between the other achievement tests, particularly in the non-Aboriginal group. In the Aboriginal group, the correlations between the Standard Progressive Matrices test and the other tests are lower than in the case of the non-Aboriginal group, and the correlations between this test and the social studies word knowledge and comprehension tests are not significant for the Aboriginal group. In the non-Aboriginal group there is also some trend for the correlations between the Standard Progressive Matrices and the other tests to be lower than the correlations between the achievement tests.

At the Grade 6 level the pattern of correlations is similar for both the Aboriginal and the non-Aboriginal groups. In both groups there is some trend for the correlations between the Standard Progressive Matrices test and the other tests to be lower than the correlations between the achievement tests, and in the Aboriginal group there is some trend for the correlations between the listening test and the other achievement tests to be lower than the correlations between the other achievement tests.

In general, the correlations between the achievement tests and the general ability test are lower than the correlations between the achievement tests. The pattern of correlations between the tests tends to vary for the Aboriginal and the non-Aboriginal groups, particularly at the Grade 2 and Grade 4 levels.

Relationship between background factors and test performance

A study of the relationship between background factors and test performance was also undertaken by means of correlations and multiple regression analyses.

Table 3.12 Correlations between Test Scores and Background Variables

	Aboriginal Group				Non-Aboriginal Group			
Background Variables	Father's Occupation	Sex F=1 M=2	Age	Days Absent	Father's Occupation	Sex F=1 M=2	Age	Days Absent
Grade 2								
CPM	-.37*	.22	-.05	.13	-.48**	.01	.06	.04
MAT 1	-.14	-.19	-.12	.02	-.44**	-.03	.12	.05
MAT 2	-.06	-.12	-.36**	.00	-.32*	.07	.23	-.03
MAT 3	-.19	-.02	-.24	-.04	-.35*	-.06	.16	-.07
MAT 4	-.39*	-.01	-.03	-.04	-.36*	.05	.15	-.03
Grade 4								
SPM	.12	.12	.06	-.14	-.11	.12	-.15	.18
SSW	.12	.04	-.17	-.06	-.16	.04	-.29*	.10
SSC	.15	-.10	.07	-.03	-.25	-.05	-.21	.06
List	.28	.04	-.03	-.14	-.37*	.03	-.02	.11
AM 4	.15	.24	-.16	-.20	-.26	.11	.02	-.04
AM 5	.26	.10	-.20	-.18	-.22	-.08	-.25	.23
Grade 6								
SPM	-.36*	.11	-.37**	-.25	-.41**	.10	.13	-.31*
SSW	-.03	-.13	-.23	-.17	-.41**	.04	.25	-.01
SSC	.28	-.19	-.04	-.16	-.31	-.13	-.16	-.10
List	-.21	.06	-.20	-.35*	-.38*	.13	-.20	-.13
AM 4	.04	-.18	-.31*	-.34*	-.12	-.13	-.40**	-.06
AM 5	-.01	-.10	-.38**	-.25	-.28	-.01	-.23	-.19

* Significant at .05 level   ** Significant at .01 level

The background factors used in these analyses were father's occupational ranking, sex, age, and number of days absent.

The correlations between the background variables and test scores are shown in Table 3.12. Father's occupational ranking is more closely related to test performance in the case of the non-Aboriginal students than in the case of the Aboriginal students. The correlations between father's occupational ranking and test score are most marked at the Grade 2 level in the non-Aboriginal group, where all test scores correlate significantly with occupational ranking. At the Grade 4 level in the non-Aboriginal group only the listening test shows a significant correlation with occupational ranking, while at the Grade 6 level the Standard Progressive Matrices test, the social studies word knowledge test and the money test (AM 5) correlate significantly with father's occupation.

Table 3.13 Results of Multiple Regression Analyses

Grade and Test	Group	Beta Weights for each Predictor: Father's Occupational Ranking	Sex F=1 M=2	Age	Number of Days Absent	Multiple Correlation Coefficient
Grade 2						
CPM	Aboriginal	-.33*	.18	.00	.09	.42*
	Non-Aboriginal	-.50**	-.07	-.04	.00	.48*
MAT 1	Aboriginal	-.18	-.21	-.03	-.02	.26
	Non-Aboriginal	-.43**	-.10	.12	-.03	.46*
MAT 2	Aboriginal	-.07	-.09	-.20	-.05	.24
	Non-Aboriginal	-.27*	.03	.22	-.06	.39
MAT 3	Aboriginal	-.20	-.03	-.16	-.02	.25
	Non-Aboriginal	-.34*	-.14	.15	-.14	.42*
MAT 4	Aboriginal	-.43**	-.10	.06	-.14	.41*
	Non-Aboriginal	-.34*	-.02	.15	-.08	.40
Grade 4						
SPM	Aboriginal	.14	.09	.13	-.28	.31
	Non-Aboriginal	-.11	.15	-.20	-.05	.25
SSW	Aboriginal	.12	.05	-.13	.10	.18
	Non-Aboriginal	-.17	.09	-.33	-.06	.36
SSC	Aboriginal	.15	-.11	.04	-.08	.19
	Non-Aboriginal	-.28*	.02	-.29	.01	.39
List (Rc)	Aboriginal	.37**	-.03	-.07	-.26	.46*
	Non-Aboriginal	-.30*	.15	-.11	.16	.35
List (Rf)	Aboriginal	.10	.09	.04	-.09	.16
	Non-Aboriginal	-.42**	.03	-.15	-.01	.44*
AM 4	Aboriginal	.18	.23	-.10	-.22	.40
	Non-Aboriginal	-.26	.13	-.18	-.05	.33
AM 5	Aboriginal	.28	.10	-.11	-.12	.35
	Non-Aboriginal	-.25	.00	-.30*	.07	.39
Grade 6						
SPM	Aboriginal	-.25	.05	-.17	-.19	.43*
	Non-Aboriginal	-.42**	.02	.06	-.19	.45*
SSW	Aboriginal	-.02	-.09	-.03	-.20	.25
	Non-Aboriginal	-.40**	-.03	-.28*	.03	.50*
SSC	Aboriginal	.30	-.04	-.01	-.19	.35
	Non-Aboriginal	-.35	-.20	-.11	-.09	.39
List (Rc)	Aboriginal	-.09	-.02	.02	-.47**	.49*
	Non-Aboriginal	-.24	.14	-.23	-.09	.39
List (Rf)	Aboriginal	-.14	.18	.06	-.28	.36
	Non-Aboriginal	-.39**	.02	-.22	-.17	.47*
AM 4	Aboriginal	.10	-.07	-.11	-.33*	.38
	Non-Aboriginal	-.14	-.14	-.36**	-.09	.41
AM 5	Aboriginal	.05	-.02	-.06	-.27	.28
	Non-Aboriginal	-.29*	-.06	-.28*	-.09	.41

* Significant at .05 level   ** Significant at .01 level

In the Aboriginal group the Coloured Progressive Matrices test and the arithmetic test (MAT 4) correlate significantly with father's occupational ranking at the Grade 2 level, while the score on the Standard Progressive Matrices test correlates significantly with father's occupation at the Grade 6 level. There are no significant correlations between test score and father's occupation at the Grade 4 level in the Aboriginal group, but there is a consistent trend for children from lower occupational backgrounds to score higher.

Sex does not correlate significantly with test performance in either group at any grade level.

There is some trend for negative correlations between age and test performance in both groups, particularly at the Grade 6 level. That is to say, the older children are showing lower scores. These correlations are significant on the word discrimination test (MAT 2) in the Aboriginal Grade 2 group, the social studies word knowledge test in the non-Aboriginal Grade 4 group, the Standard Progressive Matrices test and the arithmetic tests (AM 4 and AM 5) in the Aboriginal Grade 6 group, and the computation test (AM 4) in the non-Aboriginal Grade 6 group.

There is also some trend for negative correlations between number of days absent and test performance in the Aboriginal Grade 6 group, lower scores being associated with a higher number of absences. These correlations are significant on the listening and computation tests. There is also a significant negative correlation between number of days absent and score on the Standard Progressive Matrices test in the non-Aboriginal Grade 6 group. Correlations between number of days absent and test scores are not significant at the other grade levels.

The results of the multiple regression analyses applied to the Aboriginal and non-Aboriginal groups on each test at each grade level are shown in Table 3.13. In each case the criterion was test score, and the predictors were father's occupational ranking, sex, age and number of days absent.

In the case of the listening test at the Grade 4 and the Grade 6 levels, the regression analyses were applied to the two sub-scores of the listening test, the receptive sub-score and the reflective sub-score. In previous analyses only the total score on the listening test has been used. While the correlations between scores on the two sub-scores and between scores on the sub-scores and total scores are generally high, there are some

Table 3.14 Correlations between Performance on the 1969 Tests and the 1971 Tests: Aboriginal Grade 2 Group

1969 Tests	N	1971 Tests				
		CPM	MAT 1	MAT 2	MAT 3	MAT 4
ITPA (Mean Scaled Score)	18	.09	.73**	.80**	.75**	.62**
PPVT (Raw Score)	12	.19	.50	.62*	.62*	.44
PPVT (IQ Score)	12	.26	.43	.59*	.52	.47
Conservation of:						
Quantity	16	.35	.21	.17	.42	.41
Length	16	.30	.30	.39	.40	.17
Area	16	.39	.38	.31	.06	.16
Combined Conservation Score (QLA)	16	.46	.40	.39	.39	.32
Boehm Test:						
Part 1	11	.23	.30	.48	.51	.61*
Part 2	11	.44	.77*	.60	.34	.83**
Total	11	.38	.62*	.60	.45	.81**
ACLC						
Part 1	15	.20	.54*	.33	.07	.34
Part 2	15	.26	.26	.20	.14	.33
Part 3	15	.47	.10	.14	.08	.37
Part 4	15	.51	-.18	-.21	-.19	.27

* Significant at .05 level ** Significant at .01 level

Table 3.15 Correlations between Performance on the 1969 Tests and the 1971 Tests: Aboriginal Grade 4 and Grade 6 Groups

1969 Tests	N	1971 Tests					
		SPM	SSW	SSC	List	AM 4	AM 5
ITPA (Mean Scaled Score)	14	.24	.68*	.70**	.41	.77**	.72**
PPVT (Raw Score)	15	-.01	.35	.36	.66**	.33	.43
PPVT (IQ Score)	15	.02	.55	.28	.74**	.39	.53
Conservation of:							
Quantity	25	.28	.52*	.47*	.59**	.37	.35
Length	25	.15	.16	.51*	.39	.51*	.35
Area	25	-.01	.26	.23	.24	.57**	.44
Combined Conservation Score (QLA)	25	.18	.40	.47*	.49*	.57**	.46*

* Significant at .05 level ** Significant at .01 level

differences in the pattern of correlations between the sub-scores and the total score and between the sub-scores and father's occupational ranking in the Aboriginal and non-Aboriginal groups and at the Grade 4 and Grade 6 levels. For this reason the regression analyses were applied to the sub-scores of the listening test rather than to the total score on the listening test.

The results of the regression analyses indicate that the background variables taken together show a significant correlation with test score on some of the tests but not necessarily on all the tests. The background variable that generally contributes most to the overall correlation is father's occupational ranking, but at the Grade 6 level number of days absent and age do contribute significantly to the overall correlation in some cases. The contribution of father's occupational ranking to the overall correlation with test score tends to be greater in the non-Aboriginal sample than in the Aboriginal sample, and in the Aboriginal sample the significant contribution of father's occupational ranking to test score is not always in the expected direction, particularly at the Grade 4 level. The less marked relationship between father's occupational ranking and test score in the case of the Aboriginal group can probably be attributed to the limited range of occupational rankings in the Aboriginal group, most children coming from unskilled or semi-skilled backgrounds.

Correlations between language and conceptual skills and later school achievement

Some of the Aboriginal children tested in the 1971 primary school testing program were also included in the earlier study of the language and conceptual skills of Aboriginal primary school children undertaken by Bruce and Hengeveld in 1969 (Bruce, Hengeveld and Radford, 1971). This provided an opportunity for comparing the early language and conceptual skills of Aboriginal children with their later school achievement. While the number of children on whom information from both studies was available was small, it was thought useful to look at the correlations between scores on the earlier language and conceptual tests and later school performance in order to identify the early skills which are related to later school achievement.

Correlations between scores on the 1969 tests and the 1971 tests are shown in Table 3.14 for the Grade 2 group and Table 3.15 for the Grade 4 and Grade 6 samples. The tests given in the 1969 study included the Illinois Test of Psycholinguistic Abilities (ITPA), the Peabody Picture Vocabulary Test (PPVT), the Boehm Test of Basic Concepts, and the Assessment of Children's

Language Comprehension (ACLC). In addition, a series of Piagetian conservation tests were administered. These included conservation of quantity, weight, volume, length, area and number. However, the number of children tested on the weight, volume and number tests was very small and these correlations are therefore not reported.

The test that correlated most highly with later school achievement was the ITPA. This test showed high correlations with later achievement on the Metropolitan Achievement Tests at the Grade 2 level, and also correlated highly with achievement on the social studies word knowledge and comprehension tests and the arithmetic tests at the Grade 4 and Grade 6 levels.

An analysis of the correlations between scores on the various sub-tests of the ITPA and later achievement was also undertaken. These results are not reported here, but are presented in detail in an earlier report (de Lemos, 1972). These correlations indicated that the ITPA sub-tests did not correlate equally well with later achievement. The sub-test showing the most consistent correlation with later achievement was the auditory association sub-test, a verbal analogies test including items similar to the type of item often included in general ability tests and assessing mainly reasoning ability. The grammatic closure sub-test also showed consistent correlations with later achievement, particularly at the Grade 4 and Grade 6 levels. This is a test of grammatic constructions, involving mainly the formation of plurals, verb transformations, and use of comparative terms. Other sub-tests showing some correlations with later achievement were the visual sequential memory test, the visual association test, the visual closure test and the visual reception test. Sub-tests showing relatively low correlations with later achievement were the auditory reception test, the visual expression test, the manual expression test, and the auditory sequential memory test (digit span memory).

The PPVT showed some correlation with later school achievement, particularly on the word discrimination and reading tests at the Grade 2 level and the listening test at the Grade 4 and Grade 6 levels.

Correlations between scores on the conservation tests and later school achievement were not significant at the Grade 2 level, but conservation scores showed significant correlations with some of the later achievement tests at the Grade 4 and Grade 6 levels. The lack of correlation at the Grade 2 level would be due to the fact that these children would have been too young to have reached the level of conservation when they were tested in 1969,

Table 3.16 Correlations between Performance on the 1969 Tests and Teachers Rating of Performance in 1971: Total Aboriginal Sample

Psycholinguistic Test		Language Tests		Concept Tests	
ITPA (N=69)		PPVT (N=53)		Conservation Tests (N=74)	
Mean Scaled Score:	.66**	Verbal IQ	.53**	Quantity	.47**
Sub-tests:				Length	.34**
Auditory Reception	.41**	ACLC (N=36)		Area	.41**
Visual Reception	.37**	Part 1	.20	Combined Score (QLA)	.48**
Auditory Association	.59**	Part 2	-.02		
Visual Association	.44**	Part 3	.19		
Verbal Expression	.35**	Part 4	-.16	Boehm Test (N=16)	
Manual Expression	.41**			Part 1	.25
Grammatic Closure	.60**			Part 2	.25
Visual Closure	.36**				
Auditory Sequential Memory	.42**				
Visual Sequential Memory	.42**				

** Significant at .01 level

and the conservation tests would therefore not have been discriminating since most or all of the children would have been non-conservers.

Scores on the Boehm test showed moderate correlations with later school achievement at the Grade 2 level, but the four parts of the Assessment of Children's Language Comprehension test did not show significant correlations with later achievement. This is not surprising in view of the fact that this test assesses basic language structures normally achieved at the age of 4 or 5 years, and the majority of the Aboriginal children tested in 1969 achieved near perfect scores on this test. Correlations between the Boehm and the ACLC tests and performance at the Grade 4 and Grade 6 levels were not calculated because of the small number of children at these grade levels who were tested on the Boehm and the ACLC tests in 1969.

In addition to the correlations between scores on the 1969 tests and scores on the 1971 tests, correlations were also calculated between scores on the 1969 tests and teacher's rating of performance in 1971, as obtained from the primary school survey study. Data from this survey provided a larger sample of children on whom information was available in 1969 and also in 1971. These correlations are shown in Table 3.16.

These correlations between the 1969 test data and teacher's assessment of later school achievement indicate significant correlations between performance on the ITPA test and later school achievement, and also between performance on the PPVT and the conservation tests and later school achievement. Scores on the Boehm test did not correlate significantly with the later teacher assessments. However, this correlation is based on only a small number of cases, and the raw score on the Boehm test does not allow for differences in the age of the children tested. The scores on the ACLC test also did not correlate significantly with the later teacher assessments. As previously indicated, this test was not discriminating at the age level at which it was administered, the majority of the Aboriginal children tested obtaining near perfect scores.

The correlations between the 1969 tests and later school achievement as assessed by teachers and as measured by achievement tests therefore indicate that the language and conceptual abilities assessed in 1969 are generally related to later school achievement. The 1969 test which showed the most marked relationship with later achievement was the ITPA test, with the various sub-tests of this test showing different levels of correlation with later achievement.

The Peabody Picture Vocabulary Test and the conservation tests were also related to later achievement, and the Boehm test was related to achievement at the Grade 2 level. However, performance on the Assessment of Children's Language Comprehension was not related to later school achievement.

The language and conceptual skills tapped by the ITPA test, the PPVT and the conservation tests are therefore significantly related to school achievement, and the conclusion of Bruce, Hengeveld and Radford (1971) that the handicap in linguistic and conceptual skills revealed by these tests would significantly affect the children's later achievement in school is therefore confirmed.

Results on Teachers Questionnaire

In addition to the testing, teachers were asked to complete a questionnaire for each of the students in the sample. This questionnaire included the teacher's assessment of the student's performance in four basic subject areas (reading, arithmetic, social studies and written expression), an assessment of the student's general ability level, and a behaviour questionnaire listing a number of descriptive statements about student behaviour, the teachers being asked to mark those statements which they thought could be applied to describe the behaviour of the student concerned.

Table 3.17 Teachers' Assessments of Performance in the Basic Subject Areas and Overall Ability Level: Percentage of Students in each Category

Subject	Aboriginal Group (N=150)					Non-Aboriginal Group (N=150)				
	Very Poor	Poor	Average	Good	Very Good	Very Poor	Poor	Average	Good	Very Good
Reading	24	30	28	14	5	8	21	29	18	24
Arithmetic	27	29	29	10	5	7	23	29	23	18
Social Studies	16	24	43	14	3	5	14	41	22	18
Written Expression	27	28	31	12	3	6	26	30	22	16
Overall Ability Rating	10	39	42	7	1	6	18	48	20	9

Teachers' assesments

The percentage of Aboriginal and non-Aboriginal students in each of the teacher assessment categories in the basic subject areas and in the overall ability rating are shown in Table 3.17. A high proportion of Aboriginal students were assessed in the 'very poor' category in the basic subject areas, particularly in reading, arithmetic and written expression where approximately one-quarter of the Aboriginal students were classified as 'very poor'. Relatively few of the Aboriginal students were classified in the 'good' and the 'very good' categories. In the non-Aboriginal group, on the other hand, a much higher proportion of students were classified in the 'very good' category, and relatively few students were classified as 'very poor'.

A comparison of the teacher ratings of overall performance for the Aboriginal sample with the ratings for the total Aboriginal primary school population obtained in the primary school survey is shown in Table 3.18. The distribution of ratings for these samples suggests that the Aboriginal sample tested is probably a fairly representative sample of Aboriginal primary school students in Victoria, since the proportion of students classified in each category is similar for the two samples. The total Aboriginal primary school population does however tend to have rather more cases in the two extreme categories (i.e. either 'very poor' or 'very good'). This could be because there is a lower probability of the more extreme cases being found in the smaller population tested. It could also be due to the

Table 3.18 Results of Behaviour Questionnaire: Percentage of Aboriginal and Non-Aboriginal Students to whom Descriptive Items Applied, and Significance Level of Differences in Mean Scores on each Item

Item	Percentage of Students To Whom Descriptions Applied		Level of Significance for Difference in Mean Score on Item
	Aboriginal (N=150)	Non-Aboriginal (N=150)	
1 Tries hard and always makes an effort	59	68	
2 Gets on well with the other children in the class	65	73	
3 Seems to be rather shy and withdrawn, and keeps to himself	27	11	< .001
4 Does not seem to care if he fails or succeeds in his school work	23	15	
5 Is neat and tidy in his work	44	55	
6 Is apathetic toward his school work	21	13	
7 Often seems tired and listless in class	23	9	< .01
8 Is eager and enthusiastic	24	53	< .001
9 Concentrates well on things he enjoys doing	58	69	< .05
10 Does not seem to be able to concentrate on anything for long periods	37	19	< .01
11 Is easily distracted by other children	40	33	
12 Is disruptive in class	13	13	
13 Behaves well in class	66	69	
14 Is difficult to control	4	4	
15 Is bright but lazy	4	2	
16 Is not very bright but works hard and does well in his school work	14	14	
17 Lacks self-confidence	36	17	< .001
18 Gives up easily	32	20	< .05
19 Is careless in his work	29	22	
20 Likes to draw attention to himself	14	13	
21 Seems restless and overactive	9	10	
22 Seems to be very keen to succeed in his school work	33	48	< .01
23 Is easily upset when things go wrong.	27	23	
24 Is always helpful and co-operative	54	70	< .01
25 Likes to take part in school activities	65	71	
26 Seems to be a leader in the class	7	18	< .01

Table 3.19 Comparison of Teacher Ratings of Overall Performance for the Aboriginal Sample Tested and the Total Aboriginal Primary School Population: Percentage of Students in each Category

	Categories				
Group	Very Poor	Below Average	Average	Above Average	Very Good
Aboriginal sample tested	10	39	42	7	1
Total Aboriginal primary school population	17	36	37	10	4

slight difference in the terminology used in the two studies, which could have affected teachers' categorization of the students. Nevertheless the similarity of the distribution over the five categories does indicate a consistency in teachers' classifications and a similarity in the ability level of the two samples. This is important to note, since it adds to the confidence with which generalizations can be made from the sample tested to the Victorian Aboriginal primary school population as a whole.

Behaviour questionnaire

The results of the behaviour questionnaire are shown in Table 3.19. Each description is listed, and the percentage of cases in which the statement was said to apply in the case of the Aboriginal and the non-Aboriginal students is indicated. The level of significance for the differences in mean scores on each item for the Aboriginal and non-Aboriginal groups is also shown. These significance levels are derived from an analysis of variance applied to test the effects of group, sex and grade level on each item.

The descriptions 'shy and withdrawn', 'tired and listless', 'not able to concentrate', 'lacks self-confidence' and 'gives up easily' were more likely to be considered applicable to Aboriginal students than to non-Aboriginal students, while the descriptions 'eager and enthusiastic', 'concentrates well on things he enjoys doing', 'keen to succeed', 'helpful and co-operative', and 'a leader in the class' were more likely to be considered applicable to non-Aboriginal students. However, these differences should not lead one to overlook the fact that for a high proportion of

Aboriginal students the descriptions 'gets on well with other children in the class', 'neat and tidy', 'concentrates well on things he enjoys doing', 'behaves well in class', 'helpful and co-operative' and 'likes to take part in school activities' were also considered to apply. While a higher proportion of Aboriginal children than non-Aboriginal children do appear to show certain behaviour problems, the results of the behaviour questionnaire indicate that the majority of the Aboriginal children are well adjusted and have a positive attitude to their work.

Some significant differences between the mean scores of girls and boys on the behaviour items were also found. The descriptions 'tries hard', 'neat and tidy', 'eager and enthusiastic', 'behaves well' and 'helpful and co-operative' were more likely to be applied to girls than to boys, while the descriptions 'does not care if he fails or succeeds', 'apathetic to school work', 'concentrates well on things he enjoys doing', 'easily distracted', 'difficult to control', 'careless in his work', 'likes to draw attention to himself' and 'restless and overactive' were more likely to be considered applicable to boys than to girls. These differences were consistent in the Aboriginal and non-Aboriginal groups. There was only one case in which a significant interaction effect for group and sex was found, and this was for the description 'easily upset', where it was found that this description was more likely to be applied to Aboriginal boys than to Aboriginal girls, but in the case of the non-Aboriginal group was more likely to be applied to girls than to boys.

There was only one item on which there was a significant effect according to grade, and this was for the description 'behaves well in class', which was more likely to be applied to students in Grades 4 and 6 than to students in Grade 2.

Scoring of items on the behaviour questionnaire

The items on the behaviour questionnaire were grouped into two main categories: those referring to the student's attitude to work or academic application, and those referring to the student's social behaviour or social adjustment. Within each of these categories the items could be classified as positive or negative, depending on whether the descriptive statement indicated a good attitude to work or good social adjustment, or a poor attitude to work or poor social adjustment. The items in each category were then scored. In the case of positive items, if the item was marked as applying to the child it was scored one, if it was not marked as applying to the child it was

Table 3.20 Academic Application and Social Adjustment: Listing of Positive and Negative Items in each Category

	Academic Application (12 items)	Item Number
	Positive Items	
1	Tries hard and always makes an effort	(1)
2	Is neat and tidy in his school work	(5)
3	Is eager and enthusiastic	(8)
4	Concentrates well on things he enjoys doing	(9)
5	Is not very bright but words hard and does well in his school work	(16)
6	Seems to be very keen to succeed in his school work	(22)
	Negative Items	
1	Does not seem to care if he fails or succeeds in his school work	(4)
2	Is apathetic toward his school work	(6)
3	Does not seem to be able to concentrate on anything for long periods	(10)
4	Is bright but lazy	(15)
5	Gives up easily	(18)
6	Is careless in his work	(19)
	Social Adjustment (14 items)	
	Positive Items	
1	Gets on well with the other children in the class	(2)
2	Behaves well in class	(13)
3	Is always helpful and co-operative	(24)
4	Likes to take part in school activities	(25)
5	Seems to be a leader in the class	(26)
	Negative Items	
1	Seems to be rather shy and withdrawn, and keeps to himself	(3)
2	Often seems tired and listless in class	(7)
3	Is easily distracted by other children	(11)
4	Is disruptive in class	(12)
5	Is difficult to control	(14)
6	Lacks self-confidence	(17)
7	Likes to draw attention to himself	(20)
8	Seems restless and over active	(21)
9	Is easily upset when things go wrong	(23)

scored zero. In the case of negative items, those items marked as applying to the child were scored zero, while those items not marked as applying to the child were scored one. These scores were then summed to give a total score for the academic application items and a total score for the social adjustment items. These total scores were then used to provide an overall measure of the student's academic application and social adjustment.

The grouping of the items into the Academic Application and Social Adjustment categories, and the classification of the items as positive or negative within each category, is shown in Table 3.20. The mean scores of

Table 3.21 Academic Application and Social Adjustment Items: Mean Scores, Standard Deviations, and Results of t-tests

Group	N	Academic Application				Social Adjustment			
		Mean	SD	t	p	Mean	SD	t	p
Grade 2									
Aboriginal	54	6.9	2.9			9.6	2.9		
Non-Aboriginal	54	8.4	3.2	2.54	< .05	10.6	2.4	1.95	NS
Grade 4									
Aboriginal	49	6.6	4.3			10.0	2.3		
Non-Aboriginal	49	8.0	2.9	4.18	< .01	10.7	2.9	1.28	NS
Grade 6									
Aboriginal	47	6.8	3.3			9.4	2.7		
Non-Aboriginal	47	7.9	3.4	1.45	NS	10.6	3.2	1.92	NS

the Aboriginal and non-Aboriginal groups at each grade level on each of these groups of items are shown in Table 3.21, together with the results of t-tests applied to test the significance of the differences in mean scores.

The mean scores of the non-Aboriginal group were consistently higher than those of the Aboriginal group on both the Academic Application and the Social Adjustment items at each grade level. However, these differences were significant only in the case of the Academic Application items at the Grade 2 and Grade 4 levels. These results indicate that differences in social adjustment between Aboriginal and non-Aboriginal children, as assessed by teachers, are not significant, but that there is some trend for differences in attitudes to work as assessed by teachers, non-Aboriginal students tending to show more positive attitudes to work than Aboriginal students.

Correlations between scores on Academic Application and Social Adjustment items

Correlations between scores on the Academic Application and Social Adjustment items for the Aboriginal and non-Aboriginal groups at each grade level are shown in Table 3.22.

Correlations between scores on the Academic Application and Social Adjustment items were consistently high for both the Aboriginal and non-Aboriginal groups. In the Aboriginal group the correlation between these scores tended to be somewhat lower at the Grade 6 level than at the earlier grade levels, whereas in the non-Aboriginal group the correlation at the Grade 6 level tended to be higher than at the earlier grade levels.

Table 3.22 Correlations Between Scores on the Academic Application and Social Adjustment Items

Group	Grade 2	Grade 4	Grade 6
Aboriginal	.73**	.71**	.63**
Non-Aboriginal	.73**	.69**	.78**

** Significiant at .01 level.

Correlations between test scores and scores on the Academic Application and Social Adjustment items

The correlations between test scores and scores on the Academic Application and Social Adjustment items are shown in Table 3.23.

At the Grade 2 level there were some significant correlations between test scores and scores on the behaviour items for the non-Aboriginal children, particularly in the case of the Academic Application items, but none of the correlations between test scores and behaviour item scores were significant in the case of the Aboriginal children.

At the Grade 4 level scores on the behaviour items correlated significantly with scores on all the achievement tests in the case of the non-Aboriginal students, and with some of the achievement test scores in the case of the Aboriginal students. However, scores on the behaviour items did not correlate significantly with scores on the Standard Progressive Matrices test for either the Aboriginal or the non-Aboriginal students.

At the Grade 6 level scores on the behaviour items correlated significantly with scores on all the tests in the case of the non-Aboriginal students, the correlations with the Academic Application items tending to be higher than the correlations with the Social Adjustment items. In the case of the Aboriginal students there was some trend for significant correlations between scores on the Social Adjustment items and test scores, but scores on the Academic Application items did not correlate significantly with test scores.

The overall trend was therefore for the correlations between test scores and scores on the behaviour items to be higher for the non-Aboriginal students than for the Aboriginal students, and to be higher at the Grade 4 and Grade 6 levels than at the Grade 2 level. Correlations with behaviour

Table 3.23 Correlations Between Test Scores and Scores on the Academic Application and Social Adjustment Items

		Tests					
Group	Items	CPM	MAT 1	MAT 2	MAT 3	MAT 4	
Grade 2							
Aboriginal	AA	-.10	.11	.17	.26	.04	
	SA	-.16	.05	.04	.22	.15	
Non-Aboriginal	AA	.25	.39**	.31*	.36**	.41**	
	SA	.23	.22	.15	.39**	.41**	
Grade 4		SPM	SSW	SSC	List	AM 4	AM 5
Aboriginal	AA	-.01	.36*	.27	.15	.32*	.49**
	SA	.13	.33*	.29*	.22	.19	.37**
Non-Aboriginal	AA	.20	.53**	.38**	.35*	.40**	.45**
	SA	.26	.56**	.41**	.46**	.34*	.45**
Grade 6		SPM	SSW	SSC	List	AM 4	AM 5
Aboriginal	AA	.25	.28	.29	.03	.23	.15
	SA	.26	.31*	.43**	.23	.43**	.30*
Non-Aboriginal	AA	.30*	.60**	.55**	.44**	.59**	.45**
	SA	.34*	.41**	.45**	.44**	.39**	.30*

* Significant at .05 level ** Significant at .01 level

item scores were also higher for the achievement tests than for the non-verbal general ability test. At the Grade 6 level there was some trend for test scores to correlate more highly with scores on the Academic Application items than on the Social Adjustment items in the case of the non-Aboriginal students, but in the case of the Aboriginal students the trend was for test scores to correlate significantly with scores on the Social Adjustment items but not on the Academic Application items. This suggests that social adjustment is relatively more important to school achievement than academic application in the case of Aboriginal students than in the case of non-Aboriginal students.

Correlations between background variables and scores on the Academic Application and Social Adjustment items

The correlations between background variables and scores on the Academic Application and Social Adjustment items are shown in Table 3.24. These correlations were generally not significant. However, scores on the Academic Application items did correlate significantly with sex and with age in the case of the non-Aboriginal students at the Grade 4 and Grade 6 levels, girls scoring higher than boys, and younger students scoring higher than older

Table 3.24 Correlations Between Background Variables and Scores on the Academic Application and Social Adjustment Items

Group	Items	Background Variables: School Area (1=Metropolitan 2=Country)	Sex (1=Girl 2=Boy)	Father's Occupation (1=Highest 7=Lowest)	Age	Number of Days Absent
Grade 2						
Aboriginal	AA	.03	-.17	.10	-.02	.02
	SA	.04	-.17	.03	-.07	-.18
Non-Aboriginal	AA	.12	-.16	-.21	.07	.14
	SA	.13	-.13	-.10	.06	.00
Grade 4						
Aboriginal	AA	-.09	-.18	.08	-.16	-.15
	SA	-.15	-.04	.09	-.13	-.22
Non-Aboriginal	AA	-.31*	-.34*	-.28	-.31*	-.05
	SA	-.14	-.15	-.25	-.27	-.01
Grade 6						
Aboriginal	AA	-.16	-.07	.12	-.07	-.23
	SA	-.35*	-.14	.14	-.24	-.26
Non-Aboriginal	AA	.08	-.30*	-.17	-.40**	.15
	SA	.02	-.21	-.19	-.25	-.16

* Significant at .05 level ** Significant at .01 level

students. There were also some significant correlations with school area. At the Grade 4 level the non-Aboriginal metropolitan students scored higher than the country students on the Academic Application items, while at the Grade 6 level the Aboriginal metropolitan students scored higher than the country students on the Social Adjustment items.

Summary of Results

The results of the primary school testing program indicated significant differences in school achievement between Aboriginal and non-Aboriginal children. The Aboriginal children scored consistently lower on all the tests at all grade levels. There was some tendency for the differences between the Aboriginal and the non-Aboriginal children to be greater on the achievement tests than on the general ability test, and there was also some tendency for differences to be greater at the Grade 6 level than at the Grade 4 level, particularly on the arithmetic tests.

Comparisons of the performance of the Aboriginal and non-Aboriginal children in this study with that of random samples of Australian children and migrant children from non-English-speaking backgrounds attending Melbourne schools indicated that the scores of the Aboriginal children were consistently lower than the scores of the migrant children, and that there was also a difference in the pattern of differences from Grade 4 to Grade 6 between the Aboriginal and the migrant children. Differences from Grade 4 to Grade 6 tended to increase in the case of the Aboriginal children, but tended to decrease in the case of the migrant children, suggesting a cumulative deficit in the case of Aboriginal children which was not found in the case of migrant children.

Analyses of the factors related to school achievement indicated that the background variable most closely related to school achievement was father's occupational ranking, but that this variable was more closely related to achievement in the case of the non-Aboriginal students than in the case of the Aboriginal students. Other factors related to school achievement in some cases were number of days absent and age.

Some of the Aboriginal children tested in 1971 were also included in the earlier study of the language and conceptual skills of Aboriginal primary school children undertaken in 1969 (Bruce et al., 1971), and correlations between scores on the 1969 tests and achievement in 1971 as assessed by test scores and teacher assessments indicated a significant relationship between the language and conceptual skills assessed in 1969 and later school achievement. The 1969 test correlating most highly with later school achievement was the mean scaled score of the ITPA. Scores on the PPVT and conservation scores also correlated significantly with later school achievement.

A comparison of the behaviour item scores derived from the teachers questionnaire indicated no significant difference in social adjustment between Aboriginal and non-Aboriginal children, but some trend for a difference in attitudes to school, the non-Aboriginal children tending to show more positive attitudes to school than the Aboriginal children. These findings are somewhat different to the results from the primary school survey study and the results from the ACER literacy and numeracy study (Bourke and Parkin, 1977), which would tend to suggest a higher proportion of Aboriginal children with behaviour problems than would be expected for the Australian population as a whole. The results of the behaviour item scores derived from the teachers questionnaire should therefore be interpreted with some caution.

CHAPTER 4

DESCRIPTION OF THE SECONDARY SCHOOL TESTING PROGRAM

The aim of the secondary school testing program was to obtain objective data on the school achievement and ability of Aboriginal secondary school students, and to relate this data to the students' attitudes to school, school leaving and occupational choice. Similar information on non-Aboriginal students was also obtained for comparative purposes.

Sampling Procedure

All Aboriginal students in Victoria who were aged between 14:0 and 14:11 years at the beginning of January 1973 were included in the sample. This criterion included all students who were born in the year 1958. This age level was chosen since it would include all students in their last year of compulsory schooling, and would therefore enable a study to be made of the relationship between the student's test performance and attitude to school and his decision as to whether to leave school or continue with schooling after reaching the age of 15 years.

In addition to the Aboriginal students, two comparison groups of non-Aboriginal students were selected for inclusion in the study. These students were selected from the same schools as the Aboriginal students, the first group being matched as closely as possible to the Aboriginal students in terms of general ability, the second group being matched as closely as possible to the Aboriginal students in terms of age. The latter group would be expected to be randomly distributed in terms of ability level, and should therefore provide a representative sample of non-Aboriginal students drawn from the same schools as the Aboriginal students. This sample of students would not of course be representative of non-Aboriginal Victorian students as a whole, since the schools from which they were drawn would not be a representative sample of Victorian schools.

The Aboriginal 14-year-old students were identified on the basis of lists supplied by the Victorian Ministry of Aboriginal Affairs and the Victorian Office of the Commonwealth Department of Education. In the latter case the list included all stuents holding an Aboriginal Secondary Grant. A total of 156 students were identified, 52 students in 41 schools in the metropolitan area and 104 students in 60 schools in country areas.

All schools with Aboriginal 14-year-old students were approached early in 1973 and asked to participate in the study. They were asked to confirm whether or not the Aboriginal students listed were enrolled at their school, and for each Aboriginal 14-year-old student enrolled they were asked to select two non-Aboriginal students for the comparison groups. The non-Aboriginal students were to be of the same sex and in the same age range as the Aboriginal students (i.e. between 14:0 and 14:11 years at the beginning of January 1973), but not necessarily in the same class or form. For the first comparison group they were asked to select a non-Aboriginal student who was as close as possible to the Aboriginal student in terms of ability level, and for the second comparison group they were asked to select the non-Aboriginal student of the same sex whose birth-date fell closest to that of the Aboriginal student. Teachers were specifically asked not to select students of migrant origin for the comparison groups.

Of the 156 Aboriginal students initially listed, 129 students were located and included in the sample. Non-Aboriginal students for the comparison groups were selected for each of these students, except in one case where the school stated that it was not possible to find a non-Aboriginal student of a similar ability level to the Aboriginal student. Of the students not located, the majority were stated to have left school for work. In a few cases the students were stated to have transferred to another school, but could not be located at the new school, or the school did not know of their whereabouts. Two schools declined to participate in the study, and the two students attending these schools were therefore excluded from the study.

Of the 129 Aboriginal students included in the initial sample, 20 students dropped out during the course of the testing program. Most of these students left school before they could be tested, or were temporarily absent from school and could not be tested. This left a total of 109 Aboriginal students in the final sample, with 108 non-Aboriginal students in the ability match group and 109 non-Aboriginal students in the age match group.

Description of the Tests and Instruments Used in the Study

The test instruments used in the study included tests of achievement in reading and mathematics and a general ability test. An attitude questionnaire and a home background questionnaire were also administered, and each student was also interviewed. Basic information on each student was obtained from the teachers. Information on whether students had left school or were still at school was obtained in 1974, and a further follow-up to obtain information on date of leaving school, highest form completed and occupation taken on leaving school was undertaken in 1977.

The tests and instruments used in the study were as follows:

1 The Standard Progressive Matrices

This is a well known test which has been widely used as a test of non-verbal intelligence or general ability, and it has been applied to a number of different cultural groups. It was also used in the primary school testing program, and is described in more detail in Chapter 3.

2 The Co-operative Reading Comprehension Test (Form L)

This test is designed to assess achievement in the basic skills of reading comprehension and vocabulary use for students in Years 8, 9 and 10 (Forms 2 to 4). It assesses the student's ability to obtain and recognize facts, grasp concepts, and make inferences from written material, and also his knowledge of specific vocabulary items.

The test is divided into two parts:

Part 1 Vocabulary (15 minutes). This part comprises 60 multiple-choice synonym items. Each item assesses the student's understanding of the common meaning of the word tested. The student's task is to select from a set of four plausible alternatives the word or phrase closest in meaning to the given word.

Part 2 Reading (25 minutes). This test establishes the general reading level of the student in terms of his ability to understand prose. The test comprises a series of passages of varying styles chosen from a variety of subject areas including science, social studies and literature. Each passage is followed by a number of multiple choice questions in which the student has to select the correct answer from four alternatives. There are 60 items in all.

The reading test yields two scores:

(a) Level of comprehension score. This score is the number of correct answers in the first 30 items. Since most students have time to try all of these 30 items, this is primarily a 'power' score.

(b) Speed of comprehension score. This score is the total number of correct answers. Since all students are not expected to finish the test in the time allowed, this score gives an assessment of the student's speed of comprehension.

The Co-operative Reading Comprehension Test was normed in all States of Australia in 1970 and 1971 (ACER, 1973).

3 The Mathematics Test

The mathematics test used in this study was adapted from the IEA mathematics tests developed for 13-year-old students in the International Study of Achievement in Mathematics undertaken in 1964 (Keeves, 1966; Keeves and Radford, 1969; Husén, 1967). Items for this test were selected from Test A, Test B, and Test C of the IEA study, a total of 40 items being selected from the overall total of 70 items in these three tests. The items were selected to sample from the different content and process areas of the IEA tests, and to provide a test considered to be appropriate for the sample of students in this particular study.

The items in the IEA mathematics tests for 13-year-old students were classified into three main content areas: arithmetic, algebra and geometry. A further content area of 'new mathematics' was also distinguished, this category containing some items not classified in any of the other three areas, and some items also classified in one of the other content areas. Items were also classified into five main process areas. These process areas could be categorized according to whether the item was based on computational processes or verbal processes and according to whether the item was based on lower mental processes or higher mental processes. On the basis of this categorization the items can be classified into three main groups: computation items, lower verbal items, and higher verbal items. The computation items all fall into the category of lower mental processes and involve computational techniques and skills. Items in the lower verbal category also fall into the category of lower mental processes, and involve knowledge of definitions, notation, operations, and mathematical concepts. Items in the higher verbal category fall into the category of higher mental processes, and involve the processes of translation and interpretation of symbolic data, understanding of mathematical reasoning and ideas, and inventiveness and creativity in the application of mathematical ideas to new problems.

Table 4.1 Sub-scores of the Mathematics Test

	IEA Test (70 items)		Modified IEA Test (40 items)	
	Number of Items	Per Cent of Total Number of Items	Number of Items	Per Cent of Total Number of Items
Arithmetic	32	46	20	50
Algebra	17	24	10	25
Geometry	17	24	7	18
New Maths	13	19	6	15
Computation	29	41	20	50
Lower Verbal	20	29	14	35
Higher Verbal	21	30	6	15
Total Items	70	100	40	100

The classification of items yields a number of sub-scores for the mathematics test. These are listed in Table 4.1, together with the total number of items for each sub-score for the total IEA test and for the modified 40-item test used in this study.

From this table it can be seen that the modified 40-item test has a higher proportion of computation and lower verbal items and a lower proportion of higher verbal items than the full IEA test, indicating that the modified test would be a slightly easier version of the full test.

4 The Home Background Questionnaire

The home background questionnaire was based on that used in the International Study of Achievement in Science (Comber and Keeves, 1973). The questions covered general information on the student's homework habits, parental interest and encouragement, cultural background of the home, reading, television viewing and radio listening. An additional item in which students were asked to list the subjects they were taking at school was put in as an introductory question.

5 The Attitude Questionnaire

The attitude questionnaire was based on the attitude scales developed by Keeves (1972, 1974). This questionnaire comprised a total of 52 items, and incorporated the Keeves Like School, Academic Motivation and Self-regard scales. These attitude scales are based on the Likert model. Each item comprises a statement relating to school or to attitudes to school or self, and for each statement the student is asked to indicate whether he agrees with the statement or thinks it is usually true, whether he disagrees with the statement or thinks it is usually false, or whether he is uncertain whether he agrees or disagrees with the statement or thinks it is usually true or usually false. Each item is scored either positively or negatively. For positive items the maximum score is obtained for the response agree or true, while the minimum score is obtained for the response disagree or false. For negative items the maximum score is obtained for the response disagree or false, while the minimum score is obtained for the response agree or true. The response uncertain is scored as intermediate for both positive and negative items.

The items relating to the three scales were randomly distributed throughout the questionnaire. The Like School and Self-regard scales each comprised 16 items, while the Academic Motivation scale comprised 20 items.

6 The Interview Schedule

An interview schedule was drawn up for the interviewing of the students. This interview focused on the students' educational and vocational aspirations and expectations, the students' knowledge of various occupations and the training or educational requirements for these occupations, the educational and occupational level of the students' parents, the parents' aspirations for the student, and other information on the home background and home circumstances.

7 The Basic Information Sheet

The basic information sheet completed by the schools listed all the students in the sample at each school, and against each name the teachers were asked to indicate the present form level of the student, the number of days absent in 1973 up to the time the form was completed, any forms repeated or any other secondary schools attended, teachers' assessments of the student's achievement in the basic school subject areas, and teacher's assessment of the student's future educational or occupational potential.

8 Information on 1974 School Attendance

Forms were sent out to each school in the study in the first term of 1974 to determine how many of the students in the sample were still attending school in 1974. The forms listed the names of each student at the school, and against each name the teacher was asked to indicate whether or not the student was still at the school, and if so his present form level. If the student had left the school, the teacher was asked to indicate the date the student had left school, whether the student had transferred to another school or had left school for employment, and his current occupation if known.

9 The 1977 Follow-up

A further follow-up was undertaken in 1977 to obtain information on the final date of leaving school for all the students in the sample. Forms were sent out to each school listing the students who were still at school in 1974, and asking the teachers to indicate for each student the date of leaving school, the highest form completed, and the student's destination on leaving school. In the case of students who had left school for employment, teachers were asked to indicate, wherever known, the job the student had taken on leaving school. In the case of the Aboriginal students, further information was also sought from the Victorian Offices of the Commonwealth Department of Education an the Commonwealth Department of Employment and Industrial Relations in an attempt to obtain as much information as possible on the final occupation of the Aboriginal students in the sample.

Testing Procedure

The testing program commenced in the second term of 1973. It was divided into three distinct phases. These were as follows:

Phase 1

The first phase comprised the administration of the general ability test and the attitude questionnaire. These were administered in small groups, and in all cases the testing was carried out by the ACER research assistant working on this project. Students attending schools in metropolitan areas were tested in the first half of the second term, while those attending schools in country areas were tested in the second half of the second term and the first half of the third term. Overall this testing program lasted from the end of May to the second week in October.

Phase 2

The second phase of the testing program comprised the administration of the reading and mathematics achievement tests. In most cases these tests were administered by the schools, but in a few cases where the schools were unable to administer the tests the testing was carried out by ACER.

Detailed instructions for the administration of the tests were sent to each school. The testing was carried out during the first three weeks of the third term. The two tests (reading and mathematics) were administered in separate sessions of approximately one hour each, schools being asked to administer the reading test first and the mathematics test second. Where possible, schools were asked to administer the tests on separate days. The tests are group tests and in each school were administered to all the students in the sample attending that school. The maximum number of students at any one school was 21, and the minimum number was generally three, or less in the case of absences.

Phase 3

The third phase of the testing program involved the administration of the home background questionnaire and the interview. In the case of the Aboriginal students the interviewing and the administration of the home background questionnaire was carried out by officers of the Victorian Office of the Commonwealth Department of Education. These officers were already in contact with the Aboriginal students through the administration of the Aboriginal Secondary Grants Scheme, and it was thought preferable that the interviews be carried out by people who were already familiar with the students, and who would be interviewing them in the course of their normal duties. This interviewing was carried out during the second and third school terms of 1973.

The interviewing and the administration of the home background questionnaire in the case of the non-Aboriginal students was carried out by the ACER research assistant working on this project during the course of the testing program in the second and third school terms.

Not all the students were necessarily tested on all the tests. In some cases students were absent on the day of testing, and so missed one or more of the tests. In the case of the reading and mathematics tests, a number of the schools failed to carry out the testing as required, or failed to return the completed answer sheets. The number of missing data cases on these two tests was therefore particularly high. There were also a number of students who were not available for interviewing or who failed to complete the home background questionnaire, and in some cases the information supplied by the schools was not complete. However, all students for whom information on at least half of the measuring instruments was available were included in the study. If all students who had missing data on one or more of the instruments were excluded from the study, the loss from the sample would have been very high.

Characteristics of the Sample

Distribution of the sample

The sample was distributed over a total of 71 schools, 36 in the metropolitan area and 35 in country areas. A higher proportion of students were located in country schools (59 per cent), and of those in country schools half were located in the northern region, including the Shepparton, Echuca, Swan Hill and Robinvale areas. The remainder of the country students were located in the eastern region, including the eastern and central Gippsland area, and in the western region, including the Geelong, Ballarat, Colac and Warrnambool areas. The concentration of Aboriginal students tended to be higher in country schools than in metropolitan schools, and in country schools it tended to be highest in the eastern region and lowest in the western region.

Type of school attended

Just over half the Aboriginal students in the sample attended state high schools, with 42 per cent attending state technical schools and 6 per cent attending Catholic schools. None of the Aboriginal students attended other independent schools.

The proportion of Aboriginal students attending technical schools was higher than for the Victorian secondary school population as a whole (42 per cent as against 20 per cent for Victoria), and the proportion of Aboriginal students attending state secondary schools was also higher than for the Victorian secondary school population (94 per cent as against 74 per cent for Victoria).

There was a marked relationship between type of school attended and sex. The majority of the boys attended technical schools, while the majority of the girls attended high schools. This trend is similar to that for the Victorian population as a whole, but the proportion of Aboriginal students in the sample attending technical schools was higher for both boys and girls than for the total population of Victorian secondary students attending state schools, with 63 per cent of the boys in the sample attending technical schools as compared with 41 per cent of Victorian boys attending state secondary schools, and 22 per cent of the girls in the sample attending technical schools as compared with 10 per cent of Victorian girls attending state secondary schools. The overall proportion of Victorian boys and girls attending technical schools would be even lower, taking into account those students attending independent secondary schools.

The non-Aboriginal students in the sample were matched to the Aboriginal students according to type of school attended and sex, and the distribution of the non-Aboriginal students according to type of school attended therefore paralleled that of the Aboriginal students.

Form level

The non-Aboriginal students in the sample were not necessarily drawn from the same form level as the Aboriginal students, and there was some tendency for a higher proportion of the Aboriginal students to be located at lower form levels and a higher proportion of non-Aboriginal students to be located at higher form levels. This is shown in Table 4.2.

The majority of students in all groups were at the Form 3 level, but there were a higher proportion of Aboriginal students at the Form 1 and Form 2 levels, and a higher proportion of non-Aboriginal students at the Form 4 level, particularly in the case of the age match group. This distribution indicates that the form level of Aboriginal students tends to be lower than that of non-Aboriginal students of the same age group and attending the same schools as the Aboriginal students. The form level of the non-Aboriginal students matched to the Aboriginal students in terms of ability level also tended to be lower than that of a random sample of non-Aboriginal students of the same age and drawn from the same schools as the Aboriginal students.

Age

The students were selected from a limited age range and there was therefore very little difference in average age between the three groups, the average age of the Aboriginal and age match groups being 14:4 years, while that of

100

Table 4.2 Distribution of the Sample According to Form Level: Percentage of Students at each Form Level

Group	N	Form 1	Form 2	Form 3	Form 4	Form 5
Aboriginal Group	109	2	28	57	13	1
Non-Aboriginal Ability Match Group	108	0	21	64	15	0
Non-Aboriginal Age Match Group	109	0	14	58	28	0

the ability match group was 14:3 years. The difference between the ability match group and the other two groups was statistically significant, but is unlikely to be of any real significance in terms of its effect on the perperformance and attitudes of the ability match group as compared with the other two groups.

Sex

The number of boys and girls in the Aboriginal sample was approximately equal, with 54 boys and 55 girls. The number of boys and girls in the comparison groups matched that of the Aboriginal group, the missing case in the ability match group being a girl, and this group therefore having 54 boys and 54 girls.

Degree of Aboriginality

The Aboriginal students in the sample were rated according to degree of Aboriginality. This rating was based on the appearance of the student and was made by the ACER research assistant who carried out the testing. The categories distinguished were the same as those used in the survey studies and in the primary school testing program. There were six cases in which a rating for degree of Aboriginality was not obtained.

While some objections have been raised to the classification of students according to degree of Aboriginality on the basis of their appearance, it was thought that this information was important to the adequate description of the sample of Aboriginal students tested. The Aboriginal students in the sample ranged from students who were virtually indistinguishable from non-Aboriginal students to students who were clearly

Table 4.3 Degree of Aboriginality: Percentage of Students Rated in each Category for Sample Tested and for Total Victorian Secondary School Population

Group	N	Category Predominantly Aboriginal	 Mixed	 Predominantly European
Sample tested:				
Country	59	25	39	36
Metropolitan	44	9	27	64
Total	103	18	34	48
Total Secondary Population:				
Country	312	50	36	14
Metropolitan	103	31	45	24
Total	415	45	38	17

Aboriginal in appearance. This could well be a factor related to the students' adjustment and attitudes to school, and should also be taken into account when comparing the results of this study with those from other studies involving other groups of Aboriginal students. While the appearance of the Aboriginal student obviously cannot provide an accurate indication of degree of Aboriginal ancestry, it would seem to be a reasonable assumption that there is some relationship between degree of Aboriginal ancestry and appearance.

The percentage of Aboriginal students rated in each category for the total sample and for the country and metropolitan samples is shown in Table 4.3. The percentage of country and metropolitan students in each category and the total percentage in each category for the total secondary school population as obtained from the survey study is also shown.

It is of some interest to note that the proportion of students rated as of predominantly European descent is considerably higher in the sample of Aboriginal secondary school students tested than in the total Aboriginal secondary school population. It is difficult to determine the reason for this. It is possible that this could be due, at least in part, to a consistent bias in rating, the Aboriginal students tested all being rated by the same person while the ratings for the total population are based on ratings from a number of different teachers. It could also be due to a selective drop out in the case of the sample of students tested. Of the initial 156 Aboriginal 14-year-old students identified, only 109 were included in the final sample, a drop out of approximately one third of the 14-year-old students initially identified. It is also possible that the Aboriginal Secondary Grants Scheme is resulting in more Aboriginal students identifying as Aborigines, or being identified as Aborigines by their teachers.

The higher proportion of students classified as of predominantly European descent in the sample of Aboriginal students tested as compared with the total Aboriginal secondary school population of Victoria is probably due to a combination of these factors. Nevertheless, it is important to note, and must be borne in mind in any attempt to generalize from the findings of this study to the total Aboriginal secondary school population of Victoria or to any other Aboriginal population or group.

Attendance

The school attendance of the Aboriginal students tended to be poorer than that of the non-Aboriginal students, with a lower proportion of regular attenders (absent no more than 10 per cent of available school days) in the Aboriginal group (56 per cent) than in the non-Aboriginal groups (81 per cent in the ability match group and 86 per cent in the age match group). The average percentage of days absent was also significantly higher for the Aboriginal group (11.7) than for the non-Aboriginal groups (7.5 and 6.1).

Previous secondary schools attended

The mobility rate of the Aboriginal students was higher than that of the non-Aboriginal students, with 22 per cent of the Aboriginal students having attended more than one secondary school as compared with 7 per cent of the ability match group and 6 per cent of the age match group. In most cases students who had transferred to another school had transferred to the same type of school, most transfers being from one high school to another. There were however a few cases in which students had transferred from a high school to a technical school, or from a Catholic school to a state high school.

Forms repeated

Relatively few of the students in the sample had repeated a form. However, there was some tendency for more of the Aboriginal students to have repeated a form (7 per cent) as compared with the non-Aboriginal students (2 per cent in both the ability match and the age match groups).

Table 4.4 Socio-Economic Status: Percentage of Students in each Occupational Category

Occupational Category	Aboriginal Group (N=66)	Ability Match Group (N=95)	Age Match Group (N=94)	Aboriginal Male Workers (1966 Census)	Non-Aboriginal Male Workers (1966 Census)
1 Professional	6	7	3	1	11
2 Managerial	1	23	28	1	13
3 Clerical	6	6	12	1	14
4 Skilled	12	21	30	4	21
5 Semi-skilled	39	32	14	15	21
6 Unskilled	35	11	14	74	20

Socio-economic status

The socio-economic status of the students was determined on the basis of father's occupation, which was ranked according to the six-point scale of Broom, Jones and Zubrzycki (1965). The percentage of students in each group in each of the six categories of this scale is shown in Table 4.4, together with the percentages for Aboriginal male workers and non-Aboriginal male workers (Broom, 1971). These percentages are based on the number of cases in which father's occupation was classified. There were a number of cases, particularly in the Aboriginal group, in which information on father's occupation was not available.

The proportion of Aboriginal students in the semi-skilled and unskilled categories was higher than in the case of the non-Aboriginal groups, with relatively few Aboriginal students in the professional, managerial and clerical categories. There were a relatively high proportion of students in the managerial category in the case of the non-Aboriginal groups, with the ability match group tending to have a higher proportion of cases in the semi-skilled category as compared with the age match group, and the age match group having a higher proportion of cases in the clerical and skilled categories.

Comparing these figures with the 1966 census figures for Aboriginal and non-Aboriginal male workers, the Aboriginal group has a lower proportion of students in the unskilled category and a higher proportion of students in the higher occupational categories, particularly the semi-skilled category, than would be expected for the Aboriginal population as a whole. The non-Aboriginal groups also show some differences as compared with the non-Aboriginal male workforce as a whole, mainly in terms of the higher proportion of cases in the managerial category than would be expected for the workforce as a whole, the higher proportion of cases in the semi-skilled category in the ability match group, the higher proportion of cases in the skilled category in the age match group, and the lower proportion of cases in both the professional and the unskilled categories in both groups. These differences are probably due to the nature of our sample, which would include a higher proportion of cases living in country areas as compared with the non-Aboriginal population as a whole.

Occupation of mothers

Information on whether or not the students' mothers were working and the occupational status of working mothers was also obtained.

In the Aboriginal group a higher proportion of mothers were not working (68 per cent as compared with 51 per cent in the ability match group and 46 per cent in the age match group). Of the mothers who were working, the majority worked full-time (30 per cent in the Aboriginal group, 41 per cent in the ability match group and 43 per cent in the age match group). A few of the mothers worked part-time (2 per cent in the Aboriginal group, 8 per cent in the ability match group and 12 per cent in the age match group).

Of the mothers who worked, the majority were employed in unskilled or semi-skilled positions (78 per cent in the Aboriginal group, 68 per cent in the ability match group, and 55 per cent in the age match group). A higher proportion of mothers in the age match group were employed in professional, managerial or clerical positions (45 per cent, as compared with 26 per cent in the ability match group and 22 per cent in the Aboriginal group). A few mothers in the ability match group were employed in skilled positions (6 per cent).

Educational level of parents

Information on the educational level of the parents was also sought in the home interview, but this information was not always obtained, particularly in the case of the Aboriginal students. However, the educational background

Table 4.5 Educational Level of the Parents: Percentage of Mothers and Fathers in each Category

	Aboriginal Group		Ability Match Group		Age Match Group	
Educational Level	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers
No Schooling	6	5	0	0	0	0
Primary Schooling only	30	30	12	6	9	18
Secondary Schooling: Partial	63	55	75	83	85	76
Secondary Schooling: Completed	0	10	8	5	6	2
Tertiary Education	0	0	5	5	1	5
Total Classified	33	20	65	62	71	67
Total Classified as a Percentage of Total Sample	30	18	60	57	65	61

of the parents is of some interest to the study, and a summary of the data that was obtained is shown in Table 4.5.

The majority of the parents had attended secondary school, but relatively few parents in any group had completed secondary schooling or gone on to further education. A higher proportion of the Aboriginal parents were stated to have had primary schooling only, and a few of the Aboriginal parents were stated to have had no formal schooling.

The small number of cases on which this information is based makes it necessary to interpret these figures with caution. In the case of the Aboriginal group it is possible that the educational level of the parents is more likely to be known (or stated) in cases where it is higher than in cases where it is lower. It is therefore possible that the proportion of Aboriginal parents with secondary level schooling is actually much lower than suggested by these figures based on the small number of cases for which information on educational level is available.

Size and composition of the family

Information on family size and on the composition of the family was also obtained in the interview.

The Aboriginal students tended to come from larger families than the non-Aboriginal students, with the majority of non-Aboriginal students having no more than three siblings but the majority of Aboriginal students having four or more siblings. A substantial proportion of the Aboriginal students came from very large families with seven or more siblings (21 per cent), but only a few of the non-Aboriginal students came from such large families.

A higher proportion of the Aboriginal students came from one-parent families (14 per cent), or lived with relations or foster parents (21 per cent), or in an institution (9 per cent). Of the non-Aboriginal students, 9 per cent came from one-parent families, two lived with relations, but none lived with foster parents or in an institution. Overall 90 per cent of the non-Aboriginal students came from a normal two-parent family, as compared with only 56 per cent of the Aboriginal students.

Correlations between background variables

A series of correlations were undertaken to determine the relationship between the major background variables. The correlations were calculated separately for the Aboriginal group and for the two non-Aboriginal groups combined. The correlations for the Aboriginal group are shown in Table 4.6, while those for the non-Aboriginal group are shown in Table 4.7.

In the Aboriginal group there were some significant correlations with school area, students from the country tending to come from larger families, to be of predominantly Aboriginal descent, and to have mothers with a lower level of education. There were also significant correlations between sex and type of school attended, form level and percentage of days absent (higher absences being associated with lower form levels), form level and degree of Aboriginality (students of predominantly European descent being more likely to be at the higher form levels), father's educational and occupational level and sex (girls tending to have fathers with higher level occupations and a higher level of education), and father's occupation and number of siblings and degree of Aboriginality (higher level occupations being associated with smaller families and predominantly European ancestry).

In the non-Aboriginal group there were significant correlations between type of school attended and sex, and also low but significant correlations between type of school attended and percentage of days absent and father's occupational and educational level, students attending technical schools tending to have a greater number of absences, and also fathers from lower

Table 4.6 Correlations Between Background Variables: Aboriginal Group

Background Variables	N	Variables 1	2	3	4	5	6	7	8	9
		109	109	109	109	96	66	20	30	94
1 School Area (1=Metro. 2=Country)	109									
2 School Type (1=High 2=Tech.)	109	-.09								
3 Form	109	-.04	-.08							
4 Sex (1=Boy 2=Girl)	109	.03	-.42**	.19						
5 Percentage of Days Absent	96	-.05	-.06	-.23*	-.11					
6 Father's Occupation (1=High 16=Low)	66	.21	-.15	-.10	-.25*	.05				
7 Father's Education (1=Low 6=High)	20	-.22	-.20	-.12	.47*	.08	-.31			
8 Mother's Education (1=Low 6=High)	30	-.42*	.17	.30	.02	.13	.06	.17		
9 Number of Siblings	94	.28**	-.07	-.04	.02	.01	.29*	-.12	-.25	
10 Degree of Aboriginality[a]	103	-.29**	.05	.22*	.05	-.19	-.32*	.00	-.11	-.10

* Significant at .05 level ** Significant at .01 level

[a] 1 = predominantly Aboriginal, 3 = predominantly European

occupational levels and with lower levels of education. There were also low but significant correlations between form level and sex and between form level and percentage of days absent, higher absences being associated with lower form levels, and more girls tending to be at the higher form levels. Higher absences were also associated with lower occupational levels. There were also significant correlations between father's occupational level, educational level of parents, and number of siblings, with higher occupational levels being associated with higher educational levels and smaller families.

Summary

The Aboriginal group differed from the non-Aboriginal groups on a number of characteristics. The non-Aboriginal students were matched to the Aboriginal students in terms of geographic distribution, type of school attended, sex and age range, and there were therefore no differences on these characteristics. However, there was some tendency for the Aboriginal students to be at a lower form level, to be less regular attenders, to come from a lower

Table 4.7 Correlations Between Background Variables: Non-Aboriginal Group

Background Variables	N	1 217	2 217	3 217	4 217	5 193	6 189	7 129	8 138
1 School Area (1=Metro. 2=Country)	217								
2 School Type (1=High 2=Tech.)	217	-.11							
3 Form	217	-.09	-.10						
4 Sex (1=Boy 2=Girl)	217	.02	-.41**	.15*					
5 Percentage of Days Absent	193	-.13	.18*	-.14*	.03				
6 Father's Occupation (1=High 16=Low)	189	-.01	.15*	-.01	-.09	.25**			
7 Father's Education (1=Low 6=High)	129	-.05	-.15*	.05	.09	-.20*	-.39**		
8 Mother's Education (1=Low 6=High)	136	.03	-.11	-.04	-.08	-.22**	-.34**	.49**	
9 Number of Siblings	206	-.05	.03	-.05	.01	.22**	.20*	-.08	-.20*

* Significant at .05 level   ** Significant at .01 level

socio-economic background, and to come from larger families than the non-Aboriginal students. Differences between the two non-Aboriginal groups were less marked, but where differences did occur the trend was for the characteristics of the ability match group to be between those of the Aboriginal group and the age match group.

The pattern of correlations between the background variables tended to be a little different for the Aboriginal and the non-Aboriginal groups, location of school tending to correlate more with the other background variables in the case of the Aboriginal group, while the correlations between father's occupation and level of education of parents, size of family, percentage of days absent, and type of school attended tended to be higher in the non-Aboriginal group.

CHAPTER 5

RESULTS OF THE SECONDARY SCHOOL TESTING PROGRAM

Test Results

Comparison of mean scores

A comparison of the mean scores of the three groups on the reading and mathematics tests and on the Standard Progressive Matrices test is shown in Table 5.1. Analysis of variance procedures were used to test the significance of the differences in mean scores between the three groups, and in cases where the differences were significant the Scheffé test was applied to determine which of the differences were significant. The results of the Scheffé test are shown in Table 5.2.

The mean scores of the Aboriginal group were consistently lower than the mean scores of the non-Aboriginal groups on all the tests, while the mean scores of the ability match group were consistently lower than the mean scores of the age match group. These overall differences were in all cases highly significant.

The results of the Scheffé test (Table 5.2) indicated that the differences in mean scores between the Aboriginal group and the age match group were in all cases highly significant. The differences between the Aboriginal group and the ability match group were significant on the Standard Progressive Matrices IQ score, the mathematics test and the vocabulary score of the reading test, but were not significant on the level of comprehension score or the speed of comprehension score of the reading test. The differences between the two non-Aboriginal groups were significant only in the case of the mathematics test.

These results are illustrated graphically in Figure 5.1. In this case mean scores have been converted to standard scores, the age match group serving as the reference group with a standard score of zero.

This graph illustrates the consistent pattern of the differences between the groups. Differences between the ability match group and the age match group tend to be fairly uniform over the tests, with some tendency for greater differences on the mathematics test and the Standard Progressive Matrices. However, in comparing the Aboriginal group with the non-Aboriginal

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Table 5.1 Test Results: Mean Scores, Standard Deviations and Results of Analyses of Variance

Test	Group	N	Mean	SD	Results of Analyses of Variance		
					df	F	P
SPM (Raw Score)	Aboriginal	104	35.7	8.9	2,314	11.5	< .001
	Ability Match	107	38.6	7.9			
	Age Match	106	41.1	7.9			
SPM (IQ Score)	Aboriginal	104	94.9	13.7	2,314	12.1	< .001
	Ability Match	107	99.7	13.3			
	Age Match	106	104.3	14.6			
Mathematics Test	Aboriginal	85	10.6	5.8	2,251	21.2	< .001
	Ability Match	84	14.8	7.8			
	Age Match	85	18.0	8.4			
Reading Test: Vocabulary Score	Aboriginal	84	19.1	8.3	2,246	11.9	< .001
	Ability Match	83	23.7	11.7			
	Age Match	82	27.3	12.0			
Reading Test: Level of Comprehension Score	Aboriginal	84	13.9	5.8	2,246	7.7	< .001
	Ability Match	83	16.1	6.6			
	Age Match	82	17.7	6.8			
Reading Test: Speed of Comprehension Score	Aboriginal	84	17.2	7.6	2,246	5.3	< .01
	Ability Match	83	19.6	9.1			
	Age Match	82	21.8	10.1			

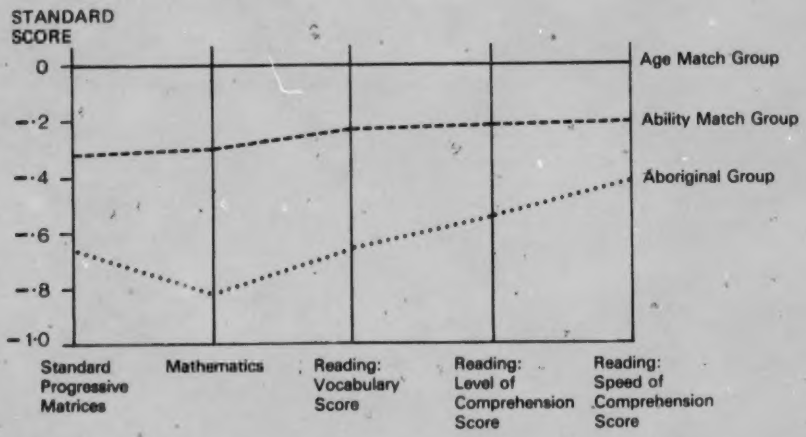


Figure 5.1 Comparison of Standard Scores of Aboriginal Group, Ability-Match Group, and Age-Match Group on Each Test

Table 5.2 Test Results: Results of Scheffé Test

Test	Results of Scheffé Test		
	Comparison	Difference in Means	P
SPM (Raw Score)	Aboriginal v Ability Match	2.6	NS
	Aboriginal v Age Match	5.4	< .001
	Ability Match v Age Match	2.6	NS
SPM (IQ Score)	Aboriginal v Ability Match	4.9	< .05
	Aboriginal v Age Match	9.4	< .001
	Ability Match v Age Match	4.5	NS
Mathematics Test	Aboriginal v Ability Match	4.2	< .01
	Aboriginal v Age Match	7.4	< .001
	Ability Match v Age Match	3.2	< .05
Reading Test: Vocabulary Score	Aboriginal v Ability Match	4.5	< .05
	Aboriginal v Age Match	8.1	< .001
	Ability Match v Age Match	3.6	NS
Reading Test: Level of Comprehension Score	Aboriginal v Ability Match	2.3	NS
	Aboriginal v Age Match	3.9	< .001
	Ability Match v Age Match	1.6	NS
Reading Test: Speed of Comprehension Score	Aboriginal v Ability Match	2.4	NS
	Aboriginal v Age Match	4.5	< .01
	Ability Match v Age Match	2.2	NS

groups, there is a more marked trend for the differences to be greater on the mathematics test, the Standard Progressive Matrices, and the vocabulary test.

Distribution of scores and comparisons with norm data

The distribution of scores on each test is illustrated in Figure 5.2. Five categories were distinguished, corresponding to those used in the primary school testing program. These categories were based on the expected distribution according to a collapsed stanine scale. The five categories distinguished were as follows:

1 Very poor (stanine level 1, expected frequency 4 per cent).

2 Below average (stanine levels 2 and 3, expected frequency 19 per cent).

3 Average (stanine levels 4, 5 and 6, expected frequency 54 per cent).

4 Above average (stanine levels 7 and 8, expected frequency 19 per cent).

5 Superior (stanine level 9, expected frequency 4 per cent).

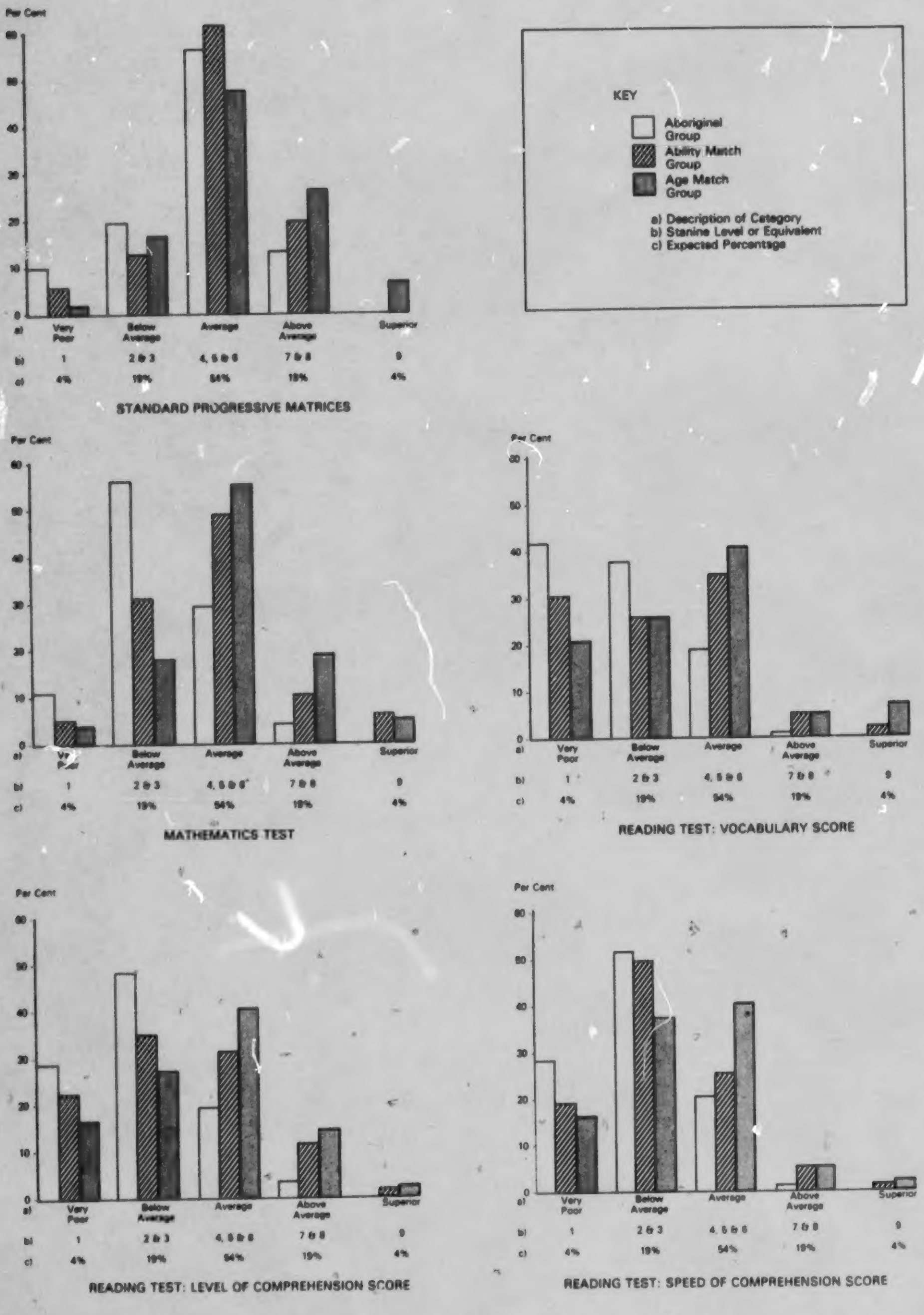


Figure 5.2 Distribution of Scores on Each Test According to Stanine Categories

In the case of the Standard Progressive Matrices test, the cut-off points for the expected distribution were based on the Australian norms obtained from the standardization sample of Melbourne children tested in 1955 and 1956 (ACER, 1958). The categorization was based on IQ scores, the cut-off points being chosen to give the required percentage in each category for the expected distribution.

In the case of the reading tests, the raw scores were converted to stanine scores according to the norms for Victorian Form 3 students.

In the case of the mathematics test, no norms were available for the test administered. The cut-off points were therefore determined according to the distribution of scores of the age match group, this group therefore serving as the norm sample for the purpose of determining the expected distribution of scores.

From Figure 5.2 it can be seen that the distribution of scores of the age match group on the Standard Progressive Matrices test approximates the expected distribution, with some tendency for a higher proportion of cases in the above average categories rather than the below average categories. The scores of the ability match group also approximate a normal distribution, but with a tendency for more scores in the average category and fewer in the above average category, with no scores in the superior category. However, the total number of scores in the above average category approximates the number of scores in the two below average categories. In the Aboriginal group the majority of scores are in the average category, with a higher proportion of scores in the below average categories rather than the above average categories, and no scores in the superior category.

The average IQ score of the age match group was 104, while that of the ability match group was 100 and that of the Aboriginal group was 95. This would suggest that the ability match group represents an average sample of students in terms of general ability level, while the age match group is slightly above average in general ability level and the Aboriginal group is below average in general ability level. However, the results of a recent study on the educational achievement of migrant children in which the Standard Progressive Matrices test was also used (de Lemos, 1975) suggest that these 1956 norms are probably out of date, and give an over-estimate of general ability level. In the migrant study the average IQ of a random sample of Australian Grade 6 children drawn from Melbourne schools was 107, while that of a random sample of migrant children from an English-speaking background was 108. These figures suggest that the average general ability

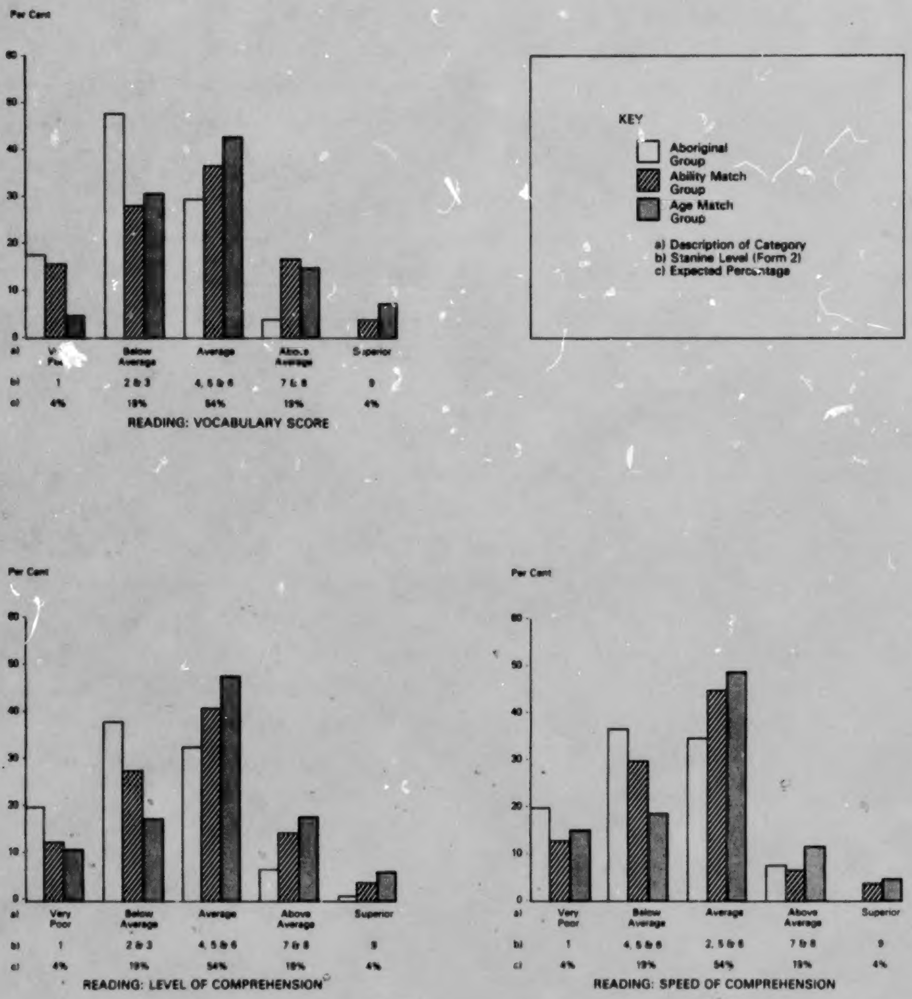


Figure 5.3 Distribution of Reading Test Scores According to Form 2 Norms

level of the age match group in this study is slightly lower than would be expected for a representative sample of Victorian 14-year-olds. This is what would be expected, taking into account the nature of the sample and the schools from which the sample was drawn, country schools and technical schools being over-represented in this sample.

These average IQs are consistent with those found at the primary school level, where the conversion of raw scores to IQ scores on the Standard Progressive Matrices gives IQ scores of 93 and 94 for the Grade 4 and Grade 6 Aboriginal samples, and IQ scores of 104 and 105 for the Grade 4 and Grade 6 non-Aboriginal samples. The non-Aboriginal samples in the primary school study would correspond with the age match sample in the secondary school sample, these groups all being random samples of non-Aboriginal students drawn from the same schools as the Aboriginal students.

On the reading test the scores of all the groups were considerably lower than would be expected on the basis of Victorian Form 3 norms. On the vocabulary test relatively few students [illegible] any group scored in the above average categories, the majority of scores falling into the average and the below average categories. In the Aboriginal group the highest proportion of scores was found in the very poor category, with slightly less in the below average category and less still in the average category. In the age match group the highest proportion of scores was found in the average category, but there were a substantial proportion of scores in the below average and the very poor categories, with only a small proportion of scores in the above average and superior category.

The comprehension scores on the reading test showed a similar concentration of scores in the average and below average categories, with relatively few scores in the above average categories, particularly on the speed of comprehension score.

The Form 3 norms were chosen as the basis for comparing the performance of the students in this study against expected distributions of scores because the majority of students in all groups were at the Form 3 level. However a number of students, particularly in the Aboriginal and ability match groups, were at the Form 2 level, and for this reason it was decided to compare the distribution of scores with the expected distribution for Victorian Form 2 students as well. This is shown in Figure 5.3.

The scores of the age match group in this study approximate the expected distribution of scores for Victorian Form 2 students, but there is still some tendency for a higher proportion of scores than expected in the below average categories, particularly on the vocabulary and speed of comprehension scores. The scores of the Aboriginal and ability match groups still tend to concentrate in the average and below average categories, and relatively few of the Aboriginal students score in the above average categories.

These results indicate that the vocabulary and reading comprehension skills of the students in this study are markedly lower than would be expected for representative samples of Victorian 14-year-old students. The scores of the age match group approximate the distribution that would be expected for Form 2 students, who would be on average a year younger than the students in our samples. The scores of the Aboriginal and ability match groups are however generally below the standard expected for Form 2 students. These results indicate a high proportion of Aboriginal 14-year-old students with a serious handicap in the vocabulary and reading skills which are important for further education or post-secondary training, and this handicap could limit their future occupational choices.

In the case of the mathematics test a high proportion of the Aboriginal students are scoring below the average of the age match group, and relatively few Aboriginal students score in the above average categories as determined on the basis of the distribution of scores in the age match group.

No norms were available for the mathematics test used in this study, and no direct comparison can be made between the total scores or the subscores of our samples and the Australian IEA sample tested in 1964 because our modified test comprised only 40 of the 70 items included in the IEA study. However, the average difficulty levels of each item for the total Australian IEA sample have been reported (Keeves, 1966), and from this data we can compare the average difficulty levels of items or groups of items in our three groups with those of the Australian IEA sample. This comparison is illustrated in Figure 5.4. The difficulty levels have been converted to facility levels (average percentage of correct responses on each item or in each subscale), and the average facility level for random response is also shown.

From Figure 5.4 it can be seen that the performance of the age match group is close to that of the Australian 13-year-old IEA sample. The relative difficulty of items in the subscales seems to be similar for all groups. The highest average facility levels are found on the arithmetic items and on the higher verbal items. The lowest average facility levels are generally found on the algebra and geometry items, although the geometry items seem to be relatively easier for the IEA sample and the algebra items relatively more difficult as compared with our samples. The new mathematics items also appear to be relatively more difficult in the IEA sample than in our samples. Possibly this type of item is more familiar to students today than it was in 1964. The computation items are relatively more difficult for the Aboriginal group than for the other groups.

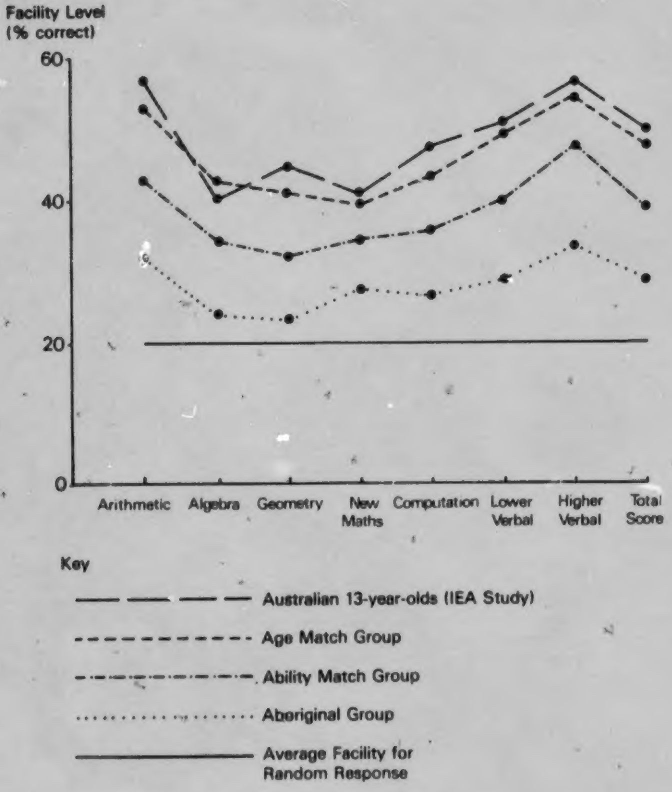


Figure 5.4 Mathematics Test: Comparison of Average Facility Levels for Items Grouped According to Sub-scores and for Total Score

It is perhaps surprising that items classified in the higher verbal category are relatively easier than items classified in the lower verbal category. This indicates that items assumed to be dependent on higher mental processes are not necessarily more difficult than items assumed to be dependent on lower mental processes. However, it is likely that this result is due to the fact that the more difficult items in the higher verbal category were not included in the modified 40-item test used in this study, while a greater range of items from the lower verbal category would have been included, including both the easier and more difficult items.

These results indicate that the performance of our age match group is comparable to that of a random sample of Australian 13-year-olds tested in 1964, with some tendency for the average facility levels in our age match group to be slightly lower than those of the Australian 13-year-olds. In making this comparison it must be remembered that our age match group is a year older than the IEA sample and are mainly in Form 3, whereas the IEA sample would have been drawn mainly from the Form 2 level. The performance of our age match group is therefore likely to be lower than that of an average Australian sample of 14-year-olds drawn mainly from Form 3. The performance of the ability match group and the Aboriginal group is considerably lower than that of the Australian 13-year-old sample, and on some groups of items the average facility levels in the Aboriginal group are only slightly higher than might be expected by chance.

These results are consistent with the findings on the reading test, where the performance of the age match group was found to be comparable with that of a representative sample of Victorian Form 2 students. In both cases the achievement of the age match group is similar to that of representative samples of Australian students approximately one year lower in age or form level.

Correlations between test scores

The correlations between scores on each test for Aboriginal and non-Aboriginal students are shown in Table 5.3. Correlations between test scores were moderate to high for both Aboriginal and non-Aboriginal students, and were in all cases highly significant. The correlations tended to be somewhat higher for non-Aboriginal students than for Aboriginal students, and in both groups the highest correlation was found between the vocabulary score and the speed of comprehension score on the reading test.

Table 5.3 Correlations between Test Scores

Tests	Aboriginal Students				Non-Aboriginal Students			
	N	1 104	2 84	3 84	N	1 216	2 165	3 165
1 SPM	104	-			216	-		
2 Reading Test: Vocabulary Score	84	.44**	-		165	.49**	-	
3 Reading Test: Speed of Comprehension Score	84	.38**	.74**	-	165	.46**	.78**	-
4 Mathematics Test:	85	.44**	.60**	.54**	169	.55**	.60**	.59**

** Significant at .01 level

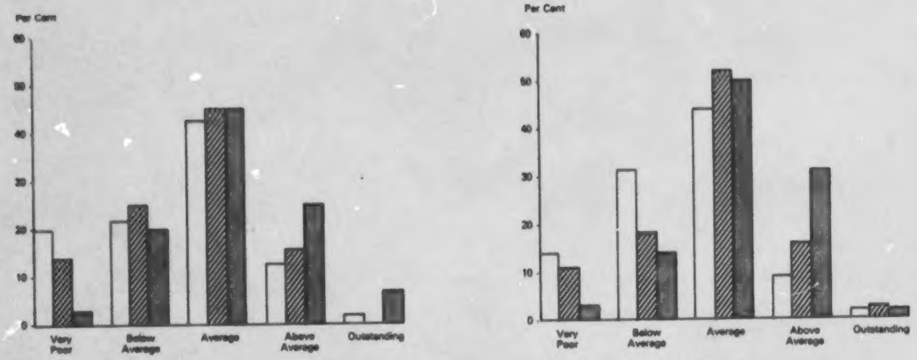
Results of Teacher Ratings

Subject ratings

Teachers were asked to rate the students' achievement in the basic school subjects. Ratings were in terms of five descriptive categories: outstanding, above average, average, below average, and very poor. Ratings were obtained for six basic subject areas: English, mathematics, science, social studies, trade subjects and commercial subjects. The results of the teacher ratings are illustrated graphically in Figure 5.5.

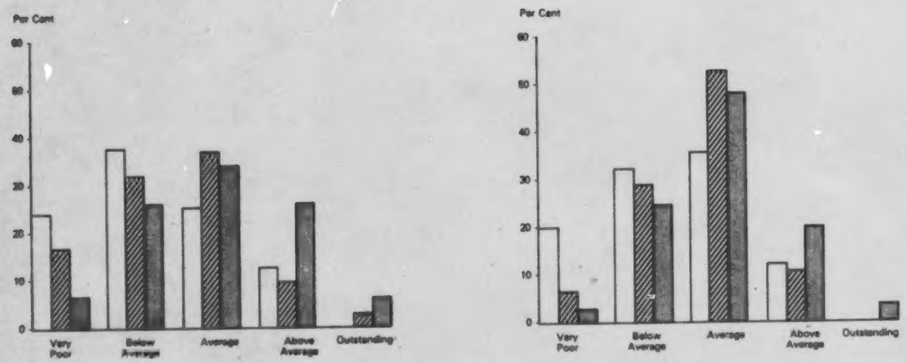
In the basic subjects of English, mathematics, science and social studies there was a trend for a higher proportion of students in the Aboriginal and ability match groups to be classified in the below average categories. In the age match group there was a fairly even distribution of ratings above and below the average category, with some trend in social studies for a higher proportion of ratings in the above average category rather than the below average category. In trade and commercial subjects there was a similar but less marked trend in the Aboriginal group for more students to be rated in the below average categories, while in the non-Aboriginal groups the trend was for more students to be rated in the above average categories, particularly in the case of the age match group.

Relatively few students in any group were rated in the outstanding category, but a substantial proportion of students in the Aboriginal group and the ability match group were rated in the very poor category, particularly in the academic subject areas.



ENGLISH

SOCIAL STUDIES



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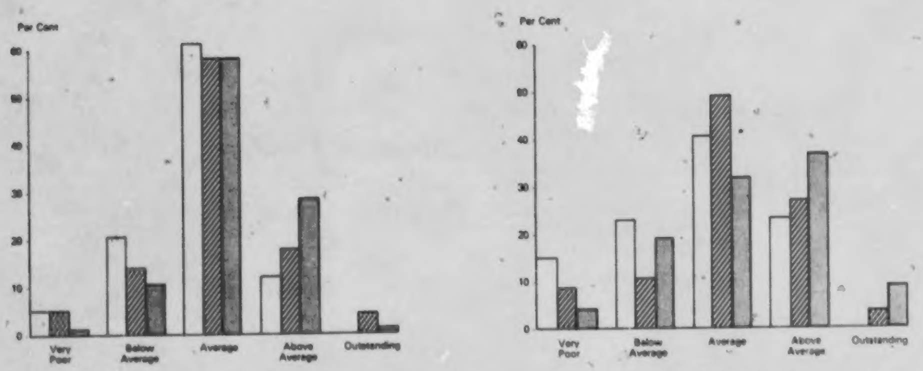
SCIENCE



TRADE SUBJECTS

COMMERCIAL SUBJECTS

Figure 5.5 Teacher Ratings: Distribution of Ratings in the Five Descriptive Categories

The teacher ratings generally confirm the pattern of performance of the Aboriginal and non-Aboriginal groups as revealed by the test scores, but the trend is for the teacher ratings to place rather more of the Aboriginal students in the average and above average categories than would be expected on the basis of the test scores.

Assessment of potential

Teachers were also asked to assess the students in terms of their future educational or occupational potential. Assessments were made in terms of five descriptive categories. These categories were as follows:

1 Capable of undertaking university level studies

2 Capable of undertaking other non-university tertiary level studies.

3 Capable of undertaking other technical training (e.g. apprenticeship).

4 Capable of undertaking clerical or sales work

5 Capable of undertaking semi-skilled or unskilled work only

The percentage of students classified in each of these categories is shown in Table 5.4. Only one Aboriginal student was assessed as having the potential for undertaking university level studies. Four students in the ability match group and eight students in the age match group were assessed as capable of undertaking university level studies. A higher proportion of students in the age match group were assessed as having the capacity for undertaking other tertiary level studies (26 per cent compared with only 11 to 12 per cent in the Aboriginal and ability match groups).

Table 5.4 Teacher's Assessment of Future Potential: Percentage of Students Classified in each Category

Category	Aboriginal Group (N=105)	Ability Match Group (N=102)	Age Match Group (N=102)
1 University Level Studies	1	4	8
2 Other Tertiary Level Studies	12	11	26
3 Technical Training	50	47	45
4 Clerical or Sales Work	19	21	14
5 Semi-skilled or Unskilled Work	18	18	7

Table 5.5 Correlations between Teacher Ratings and Test Scores: Aboriginal Group

		Test Scores			
Teacher ratings	N	Standard Progressive Matrices 104	Reading: Vocabulary Score 84	Reading: Speed of Comprehension Score 84	Mathematics 85
English	103	.34**	.53**	.32**	.49**
Mathematics	102	.32**	.43**	.31**	.52**
Science	94	.19	.41**	.29**	.40**
Social Studies	98	.29**	.49**	.32**	.42**
Trade Subjects	75	.32**	.41**	.28*	.24*
Commercial Subjects	53	.38**	.53**	.27*	.48**
Assessment of Future Potential	105	.38**	.47**	.22*	.35**

* Significant at .05 level　　** Significant at .01 level

Table 5.6 Correlations between Teacher Ratings and Test Scores: Non-Aboriginal Group

		Test Scores			
Teacher ratings	N	Standard Progressive Matrices 216	Reading Vocabulary Score 165	Reading: Speed of Comprehension Score 165	Mathematics 169
English	204	.36**	.47**	.39**	.44**
Mathematics	204	.43**	.35**	.32**	.54**
Science	186	.41**	.37**	.39**	.43**
Social Studies	198	.26**	.31*	.23**	.39**
Trade Subjects	149	.30**	.23*	.25**	.36**
Commercial Subjects	112	.28**	.42**	.30**	.34**
Assessment of Future Potential	204	.46**	.55**	.52**	.60**

* Significant at .05 level　　** Significant at .01 level

Half the students in the Aboriginal group and slightly less than half the students in the other groups were assessed as being capable of undertaking technical training such as an apprenticeship. The proportion of students assessed as capable of undertaking sales or clerical work or semi-skilled or unskilled work only was similar in the Aboriginal and ability match groups, but a lower proportion of students in the age match group were assessed in these categories.

Correlations between test scores and teacher ratings

Correlations between test scores and teacher ratings are shown in Tables 5.5 and 5.6. These correlations were generally low to moderate. In the Aboriginal group scores on the vocabulary and mathematics tests tended to correlate more highly with teacher ratings than scores on the Standard Progressive Matrices and reading tests. This trend was not so marked in the non-Aboriginal group.

The correlation between score on the mathematics test and teacher ratings of achievement in mathematics was 0.52 in the Aboriginal group and 0.54 in the non-Aboriginal group. The correlation between scores on the vocabulary test and teacher ratings of achievement in English was 0.53 in the Aboriginal group and 0.47 in the non-Aboriginal group, while the correlation between scores on the reading comprehension test and teacher ratings of achievement in English was 0.32 for the Aboriginal group and 0.39 for the non-Aboriginal group. Teacher ratings of achievement in English were therefore more closely related to vocabulary scores than to reading comprehension scores.

The correlation between scores on the Standard Progressive Matrices and teacher's assessment of future potential was 0.38 for the Aboriginal group and 0.46 for the non-Aboriginal group. In the case of the Aboriginal group the test score most highly correlated with teacher's assessment of potential was the score on the vocabulary test, while in the non-Aboriginal group the test score most highly correlated with teacher's assessment of potential was the score on the mathematics test.

Results on Attitude Scales

Comparison of mean scores

The attitude questionnaire yielded scores on three separate scales: Like School, Academic Motivation, and Self-regard. The mean scores of the three

Table 5.7 Attitude Scales: Mean Scores, Standard Deviations and Results of Analyses of Variance

Scale		N	Mean	SD	Results of Analyses of Variance		
					df	F	p
Like School	Aboriginal	104	36.0	7.6			
	Ability Match	108	33.8	8.3	2,316	2.6	NS
	Age Match	107	35.8	7.9			
Academic Motivation	Aboriginal	104	41.8	7.5			
	Ability Match	108	39.4	7.8	2,316	2.7	< .05
	Age Match	107	41.8	6.9			
Self-regard	Aboriginal	104	36.1	5.6			
	Ability Match	108	35.0	5.6	2,316	2.2	NS
	Age Match	107	36.6	5.5			

groups on each of these scales are shown in Table 5.7, together with the results of analyses of variance applied to test the significance of the differences in mean scores between the groups.

Differences between the three groups on the Like School and Self-regard scales were not significant. There was however a consistent trend for the mean score of the ability match group to be lower than that of the Aboriginal group and the age match group.

On the Academic Motivation scale the analysis of variance showed a significant difference between the three groups. The mean score of the ability match group was again lower than that of both the Aboriginal group and the age match group, while the scores of the latter two groups were very similar. However, these differences did not come out as significant on the Scheffé test, although on a normal t-test the differences between the ability match group and the other groups were significant at the .05 level.

These results indicate a consistent trend for the mean scores of the ability match group to be lower than those of the other two groups on the attitude scales, but these differences were marginally significant only in the case of the Academic Motivation scale. The scores of the Aboriginal group and the age match group were very similar on each of the attitude scales. This pattern is different to that found in the case of the achievement tests and the general ability test, where the mean scores of the Aboriginal group were consistently lower than those of the other two groups.

Item responses

Responses on each item are illustrated in Figures 5.6, 5.7 and 5.8.

On the Like School scale the items most frequently agreed with were 'I like most of my school subjects', and 'I enjoy most of my school work', while the items most frequently disagreed with were 'There is no point in me staying at school after I am fifteen', 'The sooner I can leave school the better', and 'I shall leave school as soon as possible'.

Differences between the Aboriginal and non-Aboriginal students were not particularly marked on any item on the Like School scale. Aboriginal students were generally less likely to disagree with positive statements such as 'I like most of my school subjects', 'I enjoy most of my schoolwork' and 'I enjoy everything I do at school'. In the case of the negative items the age match group tended to show the highest proportion of 'disagree' responses, particularly on the items 'School is not very enjoyable', 'I shall leave school as soon as possible', 'The sooner I can leave school the better', There is no point in me staying at school after I am fifteen', and 'I am bored most of the time in school'.

On the Academic Motivation scale the items most frequently agreed with were 'I like to complete all the work set', 'Sometimes I forget to do all my homework', and 'I try my hardest to get high marks at school'. The item most frequently disagreed with was 'Sometimes I pretend to be sick to avoid a test'.

Differences between Aboriginal and non-Aboriginal students were not particularly marked on any item on the Academic Motivation scale. Items on which the Aboriginal students were more likely to agree than the non-Aboriginal students were 'I like to have homework every night because it helps me learn', 'I want as much education as I can get', and 'I work hard all of the time in school'.

On the Self-regard scale the items most frequently agreed with were 'My friends listen to my suggestions', 'My friends ask for my advice', and 'When I do something I usually finish it'. The items most frequently disagreed with were 'My friends often forget me' and 'I am afraid my friends may think me boring'. There was some tendency for a higher proportion of uncertain responses on the Self-regard scale than on the other two scales.

Differences between Aboriginal and non-Aboriginal students were not particularly marked on any item of the Self-regard scale. Items on which

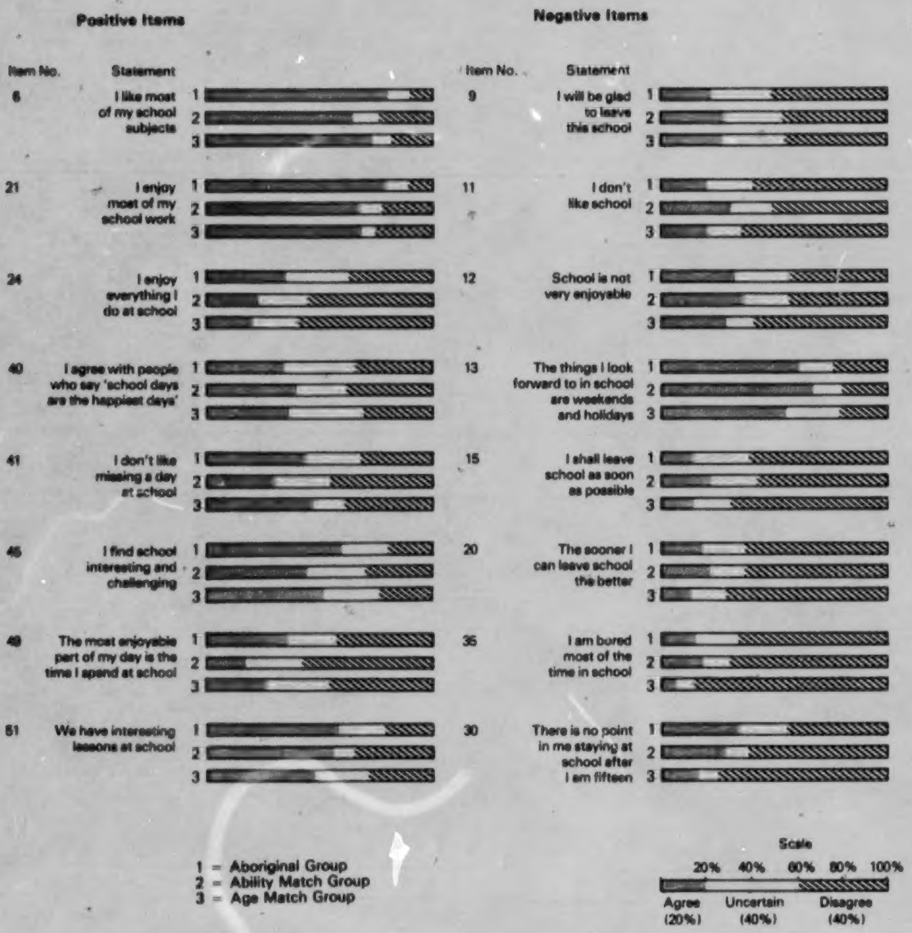


Figure 5.6 Like School Scale: Percentage of Students Agreeing, Disagreeing or Uncertain on Each Item

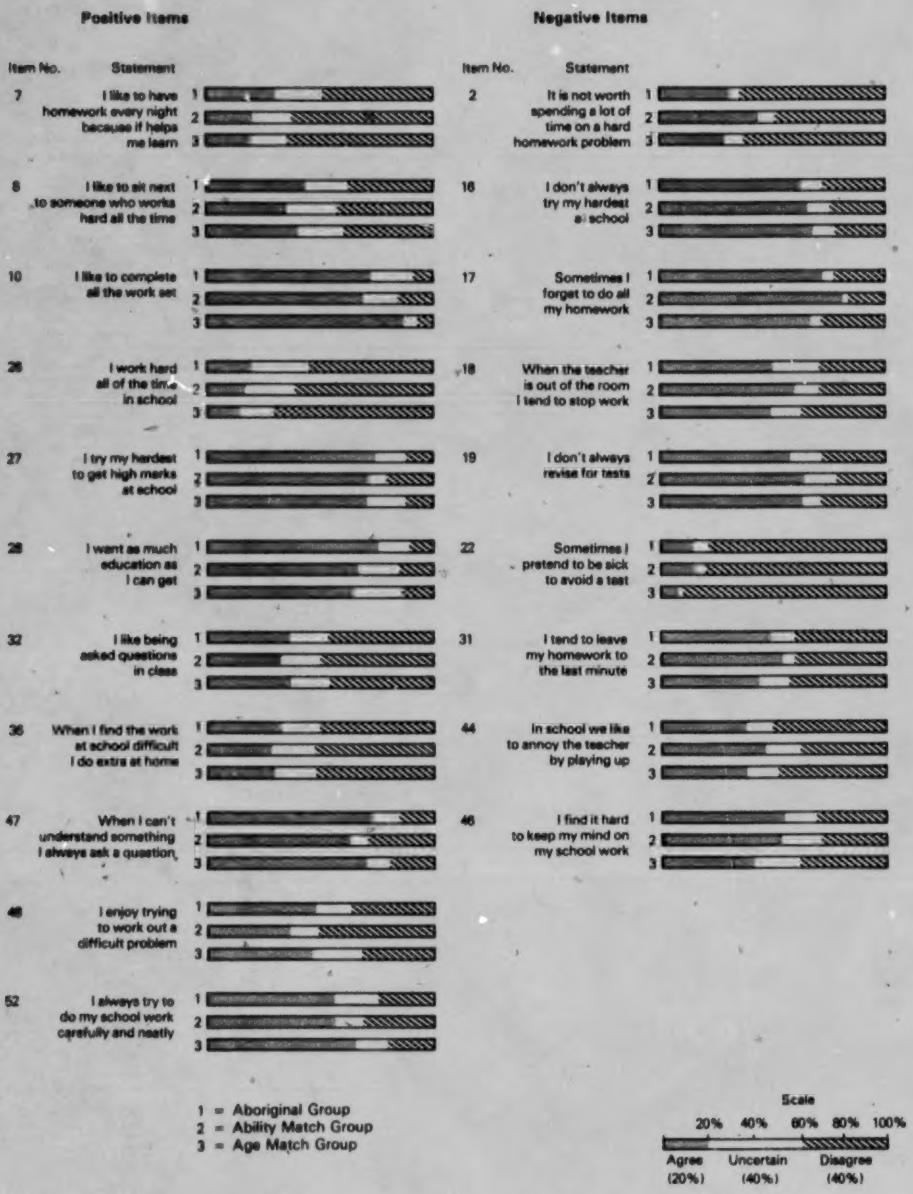


Figure 5.7 Academic Motivation Scale: Percentage of Students Agreeing, Disagreeing or Uncertain on Each Item

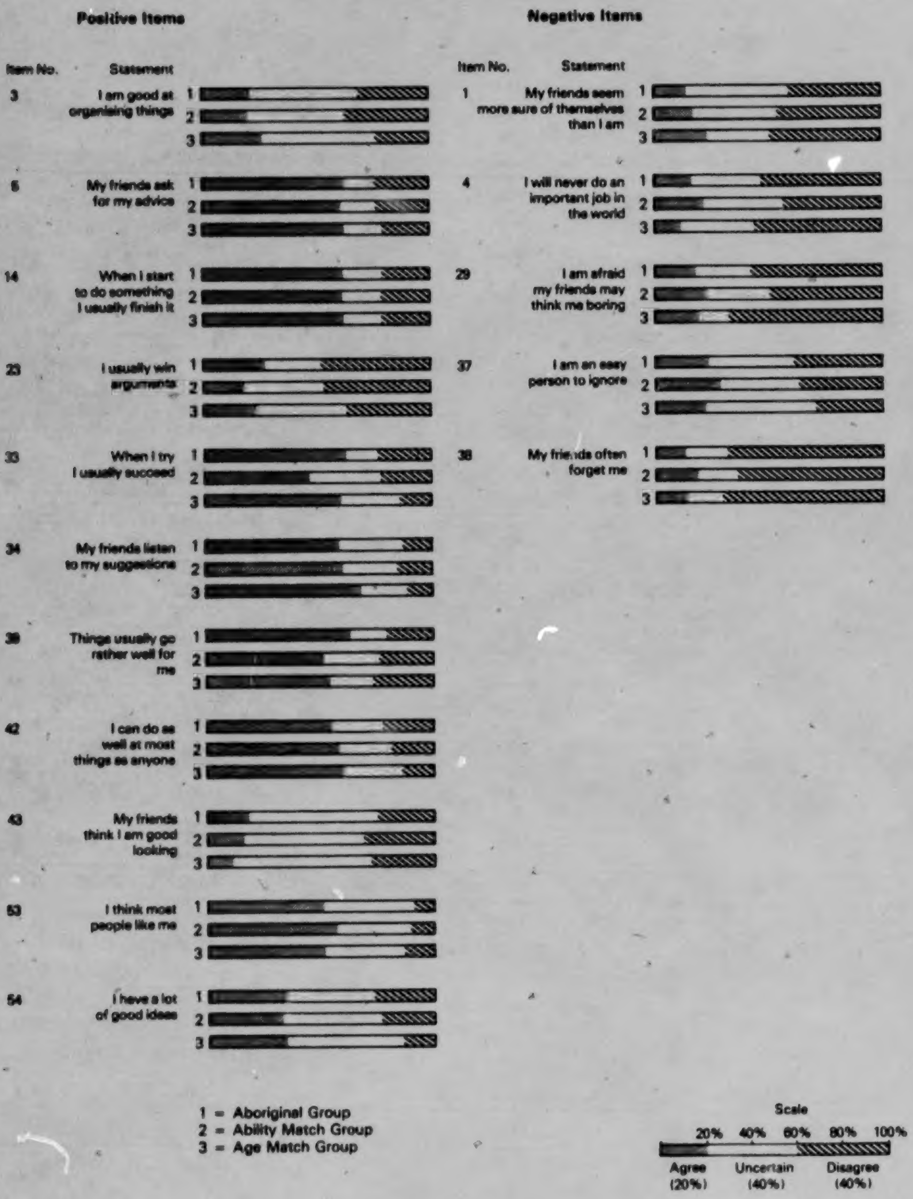


Figure 5.8 Self-Regard Scale: Percentage of Students Agreeing, Disagreeing or Uncertain on Each Item

Table 5.8 Correlations between Attitude Scores

	Aboriginal Students			Non-Aboriginal Students		
Scales	N	1 104	2 104	N	1 215	2 215
1 Like School	104	-		215	-	
2 Academic Motivation	104	.60**	-	215	.65**	
3 Self-regard	104	.43**	.35**	215	.29*	.24**

* Significant at .05 level ** Significant at .01 level

the Aboriginal students tend to show a higher proportion of 'Agree' responses responses were 'When I try I usually succeed', 'Things usually go rather well for me', and 'My friends think I am good looking'. Aboriginal students were less likely to agree with the statement 'My friends seem more sure of themselves than I am' than non-Aboriginal students.

Correlations between attitude scores

The correlations between scores on the attitude scales for Aboriginal and non-Aboriginal students are shown in Table 5.8.

The correlations between scores on the attitudes scales were significant for both Aboriginal and non-Aboriginal students. In both groups the highest correlation was found between scores on the Like School and Academic Motivation scales. Lower correlations were found between scores on the Self-regard scale and the other scales, particularly in the case of the non-Aboriginal students.

Correlations between test scores and attitude scores

The relationship between test scores and attitude scores was also investigated by means of correlations. The correlations between test scores and attitude scores for Aboriginal and non-Aboriginal students are shown in Table 5.9.

In the case of the Aboriginal students there was a significant relationship between test scores and scores on the Self-regard scale, the highest correlations being found with scores on the vocabulary test and scores on the mathematics test. There was also a significant correlation between scores on the Like School scale and mathematics score.

Table 5.9 Correlations between Test Scores and Attitude Scores

	Aboriginal Students Scales				Non-Aboriginal Students Scales			
		Like School	Academic Moti- vation	Self- Regard		Like School	Academic Moti- vation	Self- Regard
Tests	N	104	104	104	N	215	215	215
1 SPM	104	.08	-.15	.21*	216	.12	-.07	.17*
2 Reading: Vocabulary Score	84	.05	-.22*	.44**	165	.15*	-.09	.18*
3 Reading: Speed of Comprehension Score	84	.02	-.14	.29**	165	.10	-.08	.11
4 Mathematics	85	.24**	.04	.41**	169	.17*	.00	.20*

* Significant at .05 level ** Significant at .01 level

There was some trend for a negative correlation between test scores and scores on the Academic Motivation scale, this negative correlation being significant in the case of the vocabulary score.

In the case of the non-Aboriginal students the correlations between test scores and scores on the attitude scales were less marked, but there was some trend for low but significant correlations between scores on the Self-regard scale and test scores, and there were also low but significant correlations between scores on the vocabulary and mathematics tests and scores on the Like School scale. As in the case of the Aboriginal students, there was some trend for negative correlations between test scores and scores on the Academic Motivation scale, but these correlations were very low and not significant.

Overall there was not a strong relationship between test scores and scores on the attitude scales, but the attitude scores most closely related to test scores were those on the Self-regard scale, particularly in the case of the Aboriginal students. Only slight relationships were found between test scores and whether or not the students liked school, and there was some trend for a negative correlation between test scores and academic motivation, particularly in the Aboriginal group. It is likely that this negative correlation is due to the content of the items in the

Table 5.10 Correlations between Attitude Scores and Teacher Ratings: Aboriginal Group

		Attitude Scores		
		Like School	Academic Motivation	Self-regard
Teacher Ratings	N	104	104	104
English	103	.44**	.17	.41**
Mathematics	102	.31**	.09	.33**
Science	94	.34**	.13	.40**
Social Studies	98	.30**	.12	.40**
Trade Subjects	75	.25*	.08	.12
Commercial Subjects	53	.31*	.07	.34*
Assessment of Future Potential	105	.29**	.05	.29**

*Significant at .05 level **Significant at .01 level

Academic Motivation scale. The items in this scale tend to emphasize working hard at school, trying hard, and doing homework. It is possible that the weaker students may feel that they need to work extra hard to keep up, and so give positive responses on these items, while the brighter students may feel that they can get by without doing too much hard work, and so come out with a lower score on this scale.

Correlations between teacher ratings and attitude scores

Correlations between teacher ratings and scores on the attitude scales were also calculated. These are shown in Tables 5.10 and 5.11.

Correlations between teacher ratings and attitude scores were low to moderate in the case of the Like School and Self-regard scales, and were low to non-significant in the case of the Academic Motivation scale. Correlations between teacher ratings and scores on the Self-regard scale tended to be higher in the Aboriginal group than in the non-Aboriginal group, particularly in the case of the basic school subjects of English, mathematics, science and social studies.

What is of particular interest to note is that the correlations between attitude scores and teacher ratings were higher than the correlations between attitude scores and test scores. This suggests that the teachers'

Table 5.11 Correlations between Attitude Scores and Teacher Ratings: Non-Aboriginal Group

Teacher Ratings	N	Attitude Scores Like School 215	 Academic Motivation 215	 Self-Regard 215
English	204	.28**	.18*	.32**
Mathematics	204	.39**	.16*	.24**
Science	186	.41**	.19*	.22**
Social Studies	198	.33**	.14*	.24**
Trade Subjects	149	.30**	.08	.23**
Commercial Subjects	112	.29**	.13	.33**
Assessment of Future Potential	204	.41**	.18*	.28**

* Significant at .05 level ** Significant at .01 level

ratings are influenced by the students' attitudes to school, or alternatively that the students' attitudes to school are influenced by the teachers' attitudes toward the student.

In the case of the Academic Motivation scale the trend for negative correlations found in the case of correlations with test scores was reversed, and correlations with teacher ratings, while not high, were at least positive, and in the case of the non-Aboriginal group, generally significant. This again suggests that the teacher ratings tend to be influenced by the students' attitudes to work, so that the hard-working, less able student who tends to score higher on the Academic Motivation scale is also rated higher by the teacher than the more able but less conscientious student who may score high on the tests but tends to score lower on the Academic Motivation scale.

Relationship between Background Variables and Test Performance

Correlations between background variables and test performance

As a preliminary step in the examination of the relationship between background variables and test performance, a series of correlations between background variables and test scores were calculated for Aboriginal students and for non-Aboriginal students. The results of these correlations are shown in Tables 5.12 and 5.13.

Table 5.12 Correlations between Background Variables and Test Scores: Aboriginal Students

Background Variables		Tests			
		Standard Progressive Matrices	Reading: Vocabulary Score	Reading: Speed of Comprehension Score	Mathematics
	N	104	84	84	85
School Area (1=Metro. 2=Country)	109	-.05	-.21*	-.28*	-.26*
School Type (1=High 2=Tech.)	109	-.03	-.15	-.06	.08
Form (1-5)	109	.33**	.36**	.42**	.39**
Sex (1=Boy 2=Girl)	109	.03	.12	.08	-.03
Percentage of Days Absent	96	-.29**	-.34**	-.24*	-.38**
Father's Occupation (1=High 16=Low)	66	-.35**	-.33**	-.06	-.28*
Father's Education (1=Low 6=High)	20	.51*	.31	.10	.26
Mother's Education (1=Low 6 = High)	30	.03	-.05	.02	-.23
Number of Siblings	94	-.31**	-.30**	-.22	-.26*

* Significant at .05 level ** Significant at .01 level

In the case of the Aboriginal group there was a tendency for significant correlations between scores on the achievement tests and school area, students in metropolitan areas scoring higher than students in country areas. There was a similar but less marked trend in the case of the non-Aboriginal students, but scores on the Standard Progressive Matrices did not correlate significantly with school area for either the Aboriginal or the non-Aboriginal students.

Test scores correlated significantly with type of school attended on all tests except the vocabulary test in the non-Aboriginal group, students attending high school scoring higher than students attending technical school. However, correlations with type of school attended were not significant for the Aboriginal students.

Test scores correlated significantly with form level in both the Aboriginal and the non-Aboriginal groups, these correlations tending to be higher for the Aboriginal students.

Table 5.13 Correlations between Background Variables and Test Scores: Non-Aboriginal Students

		Tests			
Background Variables		Standard Progressive Matrices	Reading: Vocabulary Score	Reading: Speed of Comprehension Score	Mathematics
	N	216	84	84	85
School Area (1=Metro. 2=Country)	217	-.01	-.21*	-.16*	-.10
School Type (1=High 2=Tech.)	217	-.19**	-.15	-.26**	-.18*
Form (1-5)	217	.31**	.30**	.32**	.36**
Sex (1=Boy 2-Girl)	217	.15*	.10	.14	.07
Percentage of Days Absent	193	-.17*	-.05	-.08	-.20*
Father's Occupation (1=High 16=Low)	189	-.15*	-.09	-.13	-.06
Father's Education (1=Low 6=High)	129	.06	.12	.14	.13
Mother's Education (1=Low 6=High)	136	.13	.03	.07	.03
Number of Siblings	206	-.01	-.08	-.02	-.06

* Significant at .05 level ** Significant at .01 level

Sex did not correlate significantly with test score for either the Aboriginal or the non-Aboriginal students, except in the case of the Standard Progressive Matrices where there was a low but significant correlation for the non-Aboriginal students, girls scoring higher than boys on this test. The trend on the other tests in the non-Aboriginal group was also for girls to score higher than boys, but these correlations were not significant.

Correlations between percentage of days absent and test scores were more marked for the Aboriginal students than for the non-Aboriginal students, and these correlations were significant on all tests for the Aboriginal students, but on the Standard Progressive Matrices and the mathematics test only in the case of the non-Aboriginal students. In all cases the trend was for higher absences to be associated with lower test scores.

In the Aboriginal group father's occupation correlated significantly with test score on all tests except the reading comprehension test. The relationship between father's occupation and test score was less marked in the non-Aboriginal group, and was significant only in the case of the Standard Progressive Matrices. The trend in all cases was for lower scores to be associated with lower occupational levels.

The only significant correlation between the educational level of the parents and test score was found in the Aboriginal group, where father's educational level correlated significantly with score on the Standard Progressive Matrices. The lack of significant correlations between parents' educational level and test score is probably due to the small number of cases in which information on parents' educational level was available. If more information on parents' educational level were available it is possible that a stronger relationship between parents' educational level and test score could have been found.

In the Aboriginal group correlations between test score and number of siblings were significant for all tests except the comprehension score of the reading test, larger families being associated with lower scores. There were however no significant correlations between number of siblings and test scores in the case of the non-Aboriginal students.

Further analyses of the relationship between background variables and test performance

Further analyses of the relationship between background variables and test performance were also undertaken.

A series of one-way analyses of variance were applied to test the significance of differences in test scores according to the various background variables. The results of these analyses confirmed the pattern of relationships indicated by the correlations, and are reported in more detail elsewhere (de Lemos, 1977).

A series of AID analyses were also carried out to examine in more detail the relationship between background variables and test performance. The AID program (Sonquist and Morgan, 1964) takes the original sample and splits it into two parts on the basis of the predictor variable which explains the greatest amount of variance, this split therefore creating two groups which are more distinct than any other pair of groups that could be created by splitting on any other predictor variable.

Each of these groups is then split in turn on the predictor variable that explains the greatest amount of variance within each group, and this

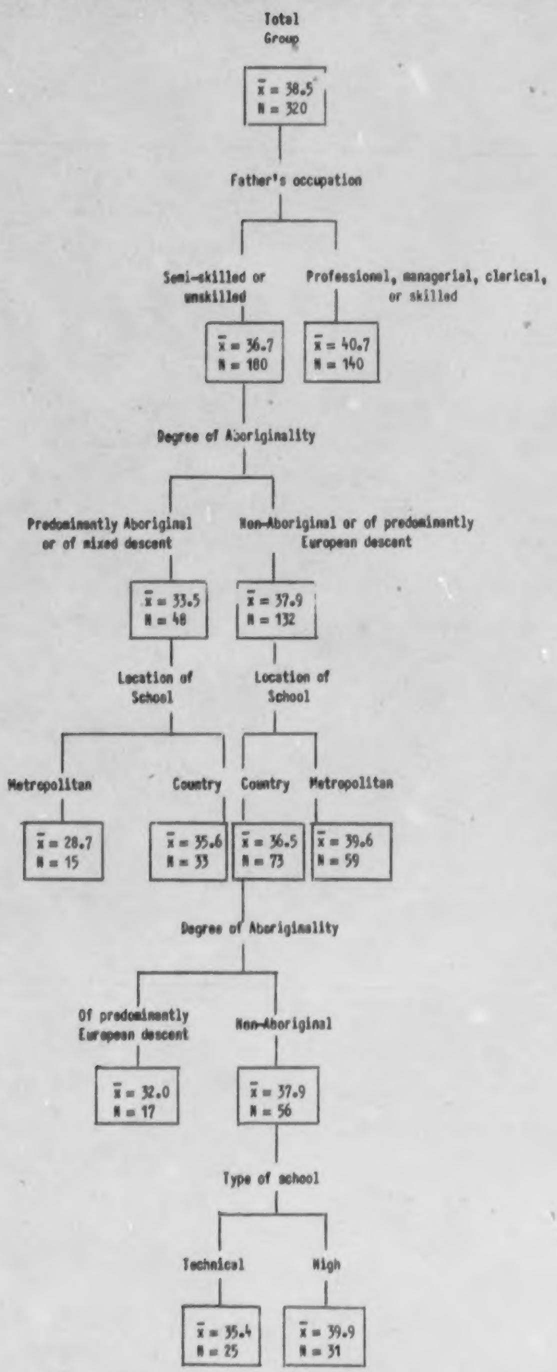

Total Group
$\bar{x}$ = 38.5
N = 320
Father's occupation
Semi-skilled or unskilled
$\bar{x}$ = 36.7
N = 180
Professional, managerial, clerical, or skilled
$\bar{x}$ = 40.7
N = 140
Degree of Aboriginality
Predominantly Aboriginal or of mixed descent
$\bar{x}$ = 33.5
N = 48
Non-Aboriginal or of predominantly European descent
$\bar{x}$ = 37.9
N = 132
Location of School
Location of School
Metropolitan
$\bar{x}$ = 28.7
N = 15
Country
$\bar{x}$ = 35.6
N = 33
Country
$\bar{x}$ = 36.5
N = 73
Metropolitan
$\bar{x}$ = 39.6
N = 59
Degree of Aboriginality
Of predominantly European descent
$\bar{x}$ = 32.0
N = 17
Non-Aboriginal
$\bar{x}$ = 37.9
N = 56
Type of school
Technical
$\bar{x}$ = 35.4
N = 25
High
$\bar{x}$ = 39.9
N = 31

Figure 5.9 AID Analysis: Background Characteristics of 14-year-old Aboriginal and non-Aboriginal Students as Predictors of Score on the Standard Progressive Matrices Test

splitting process continues until the groups formed fall below a certain minimum size, or the amount of variance explained by the remaining predictors is insufficient to justify a further split. The predictors associated with one part of the sample may be different from the predictors associated with other parts of the sample, so the sub-groups formed by the first or subsequent splits may then be split by different predictor variables.

The AID analysis therefore determines the best predictor of the criterion variable for the total group and for various subsamples of the total group. It also provides a description of the characteristics of those groups whose performance is high in terms of the criterion variable, and those groups whose performance is low, and by ranking the final groups obtained through the AID analysis according to their criterion score it is possible to describe the characteristics of various groups according to their position in relation to the criterion. The AID analysis can therefore provide a descriptive summary of the characteristics of students scoring high on the criterion variable and students scoring low on the criterion variable.

AID analyses were applied to the total sample and to the Aboriginal and non-Aboriginal groups separately in order to determine which predictor variables were most closely associated with performance on the tests. The criterion variables were scores on the Standard Progressive Matrices test, speed of comprehension score on the reading test, and score on the mathematics test. The predictor variables included in each analysis were father's occupation, type of school attended, location of school, sex, and degree of Aboriginality.[1] The results of the AID analyses applied to the total sample are illustrated in Figures 5.9, 5.10 and 5.11. The results of the AID analyses applied separately to the Aboriginal and non-Aboriginal groups are reported in more detail elsewhere (de Lemos, 1977).

Results of AID analyses

Standard Progressive Matrices. In the case of the Standard Progressive Matrices, the most important predictor of performance for the total group was father's occupation, students with father's occupation ranked in the professional, managerial, clerical and skilled categories scoring higher than students with father's occupation ranked in the semi-skilled and unskilled categories (see Figure 5.9).

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[1] When included as a predictor variable for the total sample, an additional category, 'Non-Aboriginal' was added, thus giving four categories for degree of Aboriginality ranging from 'predominantly Aboriginal' to 'non-Aboriginal (i.e. European).

Among students with fathers' occupations in the unskilled and semi-skilled categories, the next most important predictor of performance on the Standard Progressive Matrices was degree of Aboriginality, students of predominantly European descent and non-Aboriginal students scoring higher than students of predominantly Aboriginal descent or of mixed descent. Within both of these groups location of school was the next most important predictor of score, but in the case of the non-Aboriginal and predominantly European descent group it was those students attending metropolitan schools who scored higher, while in the case of the predominantly Aboriginal and mixed descent group it was those students attending country schools who scored higher.

In the case of the non-Aboriginal and predominantly European descent students attending country schools, the next most important predictor was again degree of Aboriginality, non-Aboriginal students scoring higher than students of predominantly European descent, while among the non-Aboriginal students the next most important predictor of test score was type of school attended, students attending high schools scoring higher than those attending technical schools.

This analysis can be summarized by ranking the final groups distinguished on the basis of the AID analysis according to score on the Standard Progressive Matrices test. This is shown in Table 5.14.

From Table 5.14 it can be seen that the highest scoring group were students with father's occupation in the professional, managerial, clerical or skilled categories. No other predictor variable accounted for sufficient variance to sub-divide this group further.

The next highest scoring groups from the lower occupational levels were the non-Aboriginal students attending country high schools and the non-Aboriginal students or those of predominantly European descent attending metropolitan schools.

The lowest scoring group comprised students whose fathers were in unskilled or semi-skilled occupations, who were of predominantly Aboriginal descent or of mixed descent, and who attended a metropolitan school.

Reading test. In the case of the speed of comprehension score on the reading test, the most important predictor of score for the total group was

Table 5.14 Results of AID Analysis: Ranking of Final AID Groups on Standard Progressive Matrices Test

Rank	Description of Group	N	Mean Score
1	Father's occupation professional, managerial, clerical or skilled	140	40.7
2	Father's occupation semi-skilled or unskilled, non-Aboriginal, attends country high school	31	39.9
3	Father's occupation semi-skilled or unskilled, non-Aboriginal or of predominantly European descent, attends metropolitan school	59	39.6
4	Father's occupation semi-skilled or unskilled, of mixed descent or of predominantly Aboriginal descent, attends country school	33	35.6
5	Father's occupation semi-skilled or unskilled, non-Aboriginal, attends country technical school.	25	35.4
6	Father's occupation semi-skilled or unskilled, of predominantly European descent, attends country school	17	32.0
7	Father's occupation semi-skilled or unskilled, of mixed descent or of predominantly Aboriginal descent, attends metropolitan school	15	28.7

degree of Aboriginality, non-Aboriginal students and students of predominantly European descent scoring higher than students of mixed descent or students of predominantly Aboriginal descent (see Figure 5.10).

In the non-Aboriginal and predominantly European descent group the next most important predictor of reading score was type of school attended, high school students scoring higher than technical school students. Within each of these groups the next most important predictor of reading score was location of school, students attending metropolitan schools scoring higher than students attending country schools in both the high school and the technical school groups. The only other significant predictor was father's occupation, students with father's occupation in the professional, managerial, clerical or skilled categories scoring higher than students with father's occupation in the unskilled or semi-skilled categories in the non-Aboriginal or predominantly European group attending country high schools.

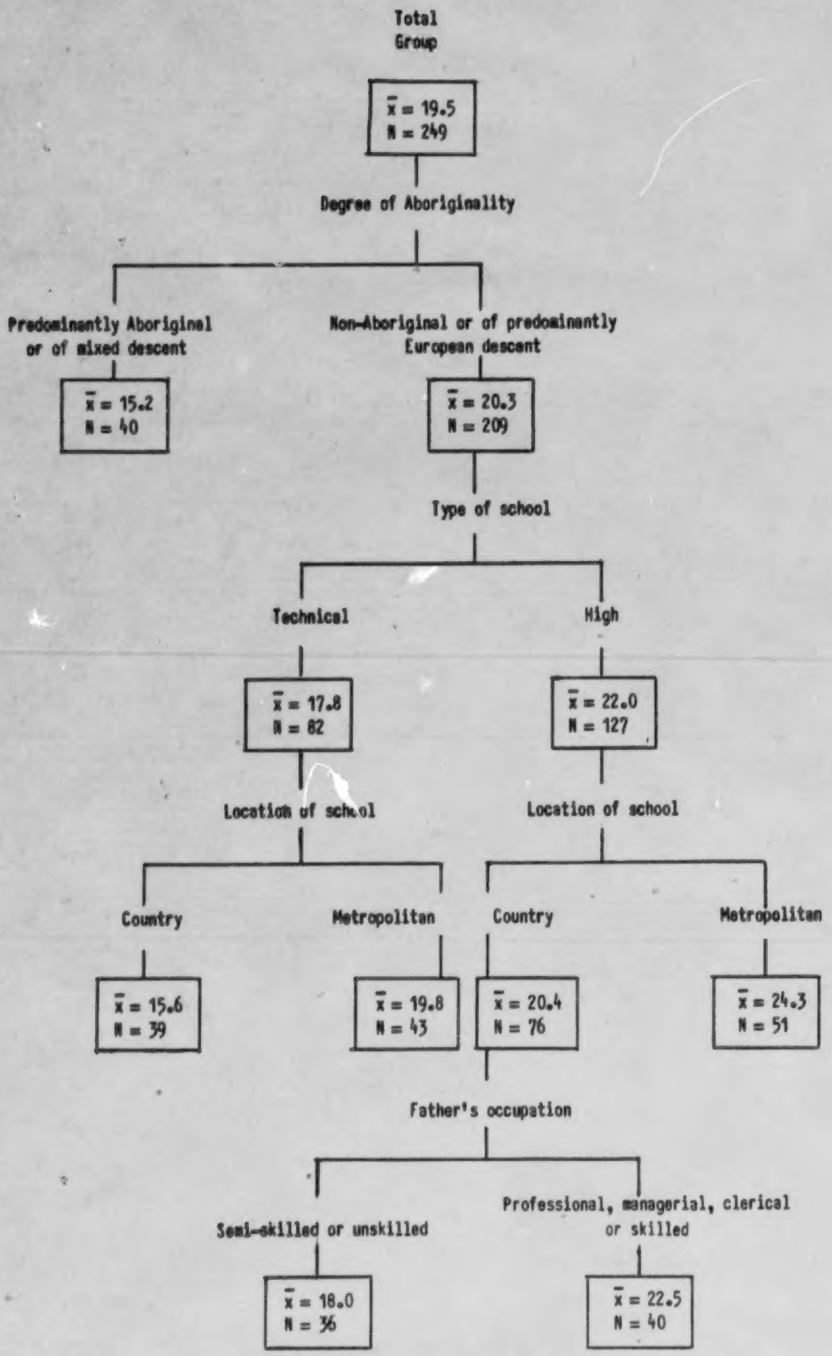
Total Group
x̄ = 19.5
N = 249
Degree of Aboriginality
Predominantly Aboriginal or of mixed descent
x̄ = 15.2
N = 40
Non-Aboriginal or of predominantly European descent
x̄ = 20.3
N = 209
Type of school
Technical
x̄ = 17.8
N = 82
High
x̄ = 22.0
N = 127
Location of school
Country
x̄ = 15.6
N = 39
Metropolitan
x̄ = 19.8
N = 43
Location of school
Country
x̄ = 20.4
N = 76
Metropolitan
x̄ = 24.3
N = 51
Father's occupation
Semi-skilled or unskilled
x̄ = 18.0
N = 36
Professional, managerial, clerical or skilled
x̄ = 22.5
N = 40

Figure 5.10 AID Analysis: Background Characteristics of 14-year-old Aboriginal and Non-Aboriginal Students as Predictors of Speed of Comprehension Score on the Reading Test

Table 5.15 Results of AID Analysis: Ranking of Final AID Groups on Speed of Comprehension Score on the Reading Test

Rank	Description of Group	N	Mean Score
1	Non-Aboriginal or of predominantly European descent, attending metropolitan high school	51	24.13
2	Non-Aboriginal or of predominantly European descent, attending country high school, father's occupation professional, managerial, clerical or skilled	40	22.5
3	Non-Aboriginal or of predominantly European descent, attending metropolitan technical school	43	19.8
4	Non-Aboriginal or of predominantly European descent, attending country high school, father's occupation semi-skilled or unskilled	36	18.0
5	Non-Aboriginal or of predominantly European descent, attending country technical school	39	15.6
6	Of predominantly Aboriginal descent, or of mixed descent	40	15.2

The final groups distinguished on the AID analysis were ranked in order according to speed of comprehension score on the reading test. This ranking, together with a description of each group, is shown in Table 5.15.

The highest scoring groups were the non-Aboriginal students or students of predominantly European descent attending metropolitan high schools, and those attending country high schools whose fathers' occupations were in the higher occupational categories.

The next highest scoring groups were the non-Aboriginal or predominantly European descent students attending metropolitan technical schools, and those attending country high schools whose fathers' occupations were in the lower occupational categories.

The lowest scoring groups were students of predominantly Aboriginal descent or of mixed descent, and non-Aboriginal students or students of predominantly European descent attending country technical schools.

Mathematics test. In the case of the mathematics test, the most important predictor of test score for the total group was degree of Aboriginality, non-Aboriginal students scoring higher than Aboriginal students (see Figure 5.11).

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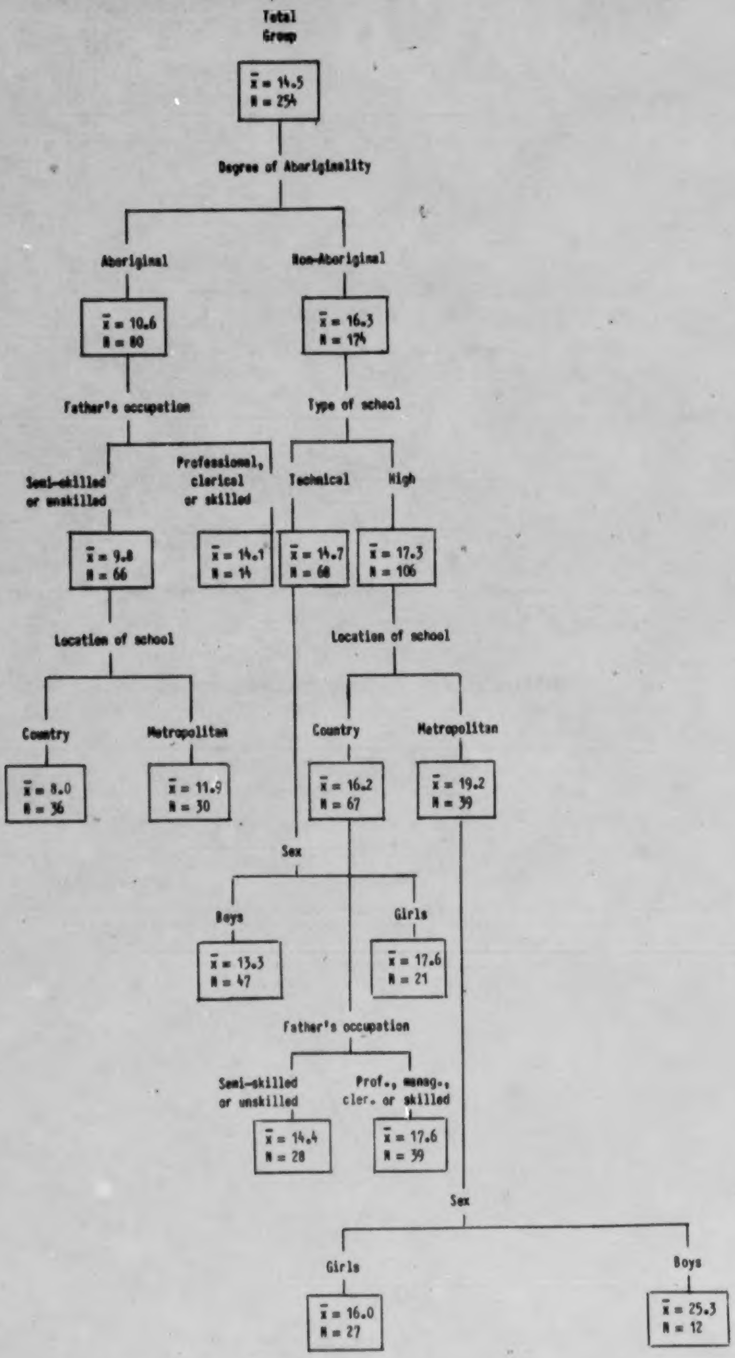
Total Group
x̄ = 14.5
N = 254
Degree of Aboriginality
Aboriginal
Non-Aboriginal
x̄ = 10.6
N = 80
x̄ = 16.3
N = 174
Father's occupation
Type of school
Semi-skilled or unskilled
Professional, clerical or skilled
Technical
High
x̄ = 9.8
N = 66
x̄ = 14.1
N = 14
x̄ = 14.7
N = 68
x̄ = 17.3
N = 106
Location of school
Location of school
Country
Metropolitan
Country
Metropolitan
x̄ = 8.0
N = 36
x̄ = 11.9
N = 30
x̄ = 16.2
N = 67
x̄ = 19.2
N = 39
Sex
Boys
Girls
x̄ = 13.3
N = 47
x̄ = 17.6
N = 21
Father's occupation
Semi-skilled or unskilled
Prof., manag., cler. or skilled
x̄ = 14.4
N = 28
x̄ = 17.6
N = 39
Sex
Girls
Boys
x̄ = 16.0
N = 27
x̄ = 25.3
N = 12

Figure 5.11 AID Analysis: Background Characteristics of 14-year-old Aboriginal and Non-Aboriginal Students as Predictors of Score on the Mathematics Test

Among the non-Aboriginal students the most important predictor of mathematics score was type of school attended, high school students scoring higher than technical school students. Among the high school students the next most important predictor of test score was location of school, students attending metropolitan high schools scoring higher than students attending country high schools, while among the technical school students the next most important predictor of test score was sex, girls scoring higher than boys. Among the non-Aboriginal students attending metropolitan high schools, the most important predictor of mathematics score was sex, boys scoring higher than girls. Among the non-Aboriginal students attending country high schools, the most important predictor of score was father's occupation, students with fathers in the professional, managerial, clerical and skilled occupation categories scoring higher than students with fathers in semi-skilled and unskilled occupational categories.

Among the Aboriginal students the most important predictor of mathematics score was father's occupation, students with fathers' occupations in the professional, managerial, clerical or skilled categories scoring higher than students with fathers' occupations in the semi-skilled or unskilled categories. Among the Aboriginal students in the lower occupational category location of school was the next most important predictor of test score, students attending metropolitan schools scoring higher than those attending country schools.

The final groups distinguished on the AID analysis were ranked in order according to their mathematics score. This is shown in Table 5.16.

The highest scoring group on the mathematics test were the non-Aboriginal boys attending metropolitan high schools. The mean score of this group was markedly higher than that of any of the other groups.

The next highest scoring groups were the non-Aboriginal students in the higher occupational categories attending country high schools, non-Aboriginal girls attending technical schools, and non-Aboriginal girls attending metropolitan high schools.

Following these groups were the non-Aboriginal students in the lower occupational categories attending country high schools, Aboriginal students in the higher occupational categories, and non-Aboriginal boys attending technical schools.

The lowest scoring groups were the Aboriginal students with semi-skilled or unskilled fathers attending country and metropolitan schools.

Table 5.16 Results of AID Analysis: Ranking of Final AID Groups on Mathematics Test

Rank	Description of Group	N	Mean Score
1	Non-Aboriginal, attends metropolitan high school, boy	12	25.3
2	Non-Aboriginal, attends country high school, father's occupation professional, managerial, clerical or skilled	39	17.6
3	Non-Aboriginal, attends technical school, girl	21	17.6
4	Non-Aboriginal, attends metropolitan high school, girl	27	16.0
5	Non-Aboriginal, attends country high school, father's occupation semi-skilled or unskilled	28	14.4
6	Aboriginal, father's occupation professional, managerial, clerical or skilled	14	14.1
7	Non-Aboriginal, attends technical school, boy	47	13.3
8	Aboriginal, father's occupation semi-skilled or unskilled, attends metropolitan school	30	11.9
9	Aboriginal, father's occupation semi-skilled or unskilled, attends country school	36	8.0

Summary of AID analyses

The results of the AID analyses indicated that the most important predictors of test score for the total sample were generally father's occupation and degree of Aboriginality, while type of school attended, location of school and sex were in some cases predictors of score for particular sub-groups of the total sample. Type of school attended tended to be a more important predictor of test scores for the non-Aboriginal students than for the Aboriginal students, while location of school tended to be a more important predictor for the Aboriginal students.

The AID analysis provides a description of the characteristics of those students scoring high on the tests and those students scoring low on the tests, and indicates which variables are the best predictors of score for the total sample and for various sub-groups of the total sample. Moreover, the AID analysis takes into account the interrelations between the predictor variables, and forms sub-groups in which the interactions between the variables are taken into consideration.

Table 5.17 Correlations between Background Variables and Attitude Scores: Aboriginal Students

Background Variables	N	Like School 104	Academic Motivation 104	Self-regard 104
School Area (1=Metro. 2=Country)	109	-.06	.05	-.29**
School Type (1=High 2-Tech.)	109	.16	.06	.05
Form (1-5)	109	.01	-.08	.06
Sex (1=Boy 2=Girl)	109	.00	.03	.09
Percentage of Days Absent	96	-.09	.05	-.10
Father's Occupation (1=High 16=Low)	66	-.03	.08	-.03
Father's Education (1=Low 6=High)	20	.41	.09	.18
Mother's Education (1=Low 6=High)	30	.32	-.06	.22
Number of Siblings	94	-.06	.08	-.28**

Attitude Scales (spanning header over Like School, Academic Motivation, Self-regard)

** Significant at .01 level

Relationship between Background Variables and Attitude Scores

Correlations between background variables and attitude scores

Correlations between background variables and attitude scores for Aboriginal students and for non-Aboriginal students are shown in Tables 5.17 and 5.18.

In the Aboriginal group, the only significant correlations between attitude scores and background variables were found in the case of the Self-regard scale. In particular, the correlations of self-regard with school area (students in metropolitan schools scoring higher than students in country schools) and with number of siblings (students from smaller families scoring higher than students from larger families) were both significant at the one per cent level.

Table 5.18 Correlations between Background Variables and Attitude Scores: Non-Aboriginal Students

Background Variables	N	Attitude Scales Like School 215	 Academic Motivation 215	 Self-regard 215
School Area (1=Metro. 2=Country)	217	-.06	.01	-.09
School Type (1=High 2=Tech.)	217	-.02	.11	.05
Form (1-5)	217	-.03	-.10	.20**
Sex (1=Boy 2=Girl)	217	.09	.01	.10
Percentage of Days Absent	193	-.22**	-.07	-.13
Father's Occupation (1=High 2=Low)	189	-.14*	-.08	-.17*
Father's Education (1=Low 6=High)	129	.06	-.01	.06
Mother's Education (1=Low 6=High)	136	.03	.00	.09
Number of Siblings	206	-.14*	-.19*	-.14*

* Significant at .05 level ** Significant at .01 level

Correlations between scores on the Like School scale and the educational level of the mother and father in the Aboriginal group were relatively high, but because of the small number of cases in which the educational level of the parents was known these correlations did not reach statistical significance.

In the non-Aboriginal group there was a significant correlation between score on the Self-regard scale and form level, students at the higher form levels scoring higher on this scale than students at the lower form levels. There was also a significant correlation between score on the Like School scale and percentage of days absent, higher absences being associated with lower scores on this scale. Father's occupation correlated significantly with scores on the Like School and Self-regard scales, higher occupational levels being associated with higher scores on these scales. Number of siblings also correlated significantly with attitude scores, larger families being associated with lower scores on all the scales.

One-way analyses of variance were also applied to test the significance of differences in attitude scores according to the various background variables. The results of these analyses are reported in more detail elsewhere (de Lemos, 1977), but in general they confirmed the pattern of relationships indicated by the correlations.

Results of AID analyses

As in the case of the test scores, AID analyses were applied to the attitude scores to determine which predictor variables were most closely associated with scores on the attitude scales. The predictor variables included in each analysis were father's occupation, type of school attended, location of school, sex, degree of Aboriginality, and teacher's assessment of potential. The analyses were applied to the total group and to the Aboriginal and the non-Aboriginal groups separately. Only the analyses applied to the total group are reported here. The analyses applied to the Aboriginal and the non-Aboriginal groups separately are reported in more detail elsewhere (de Lemos, 1977).

The results of the AID analyses applied to the total group for the Like School scale, the Academic Motivation scale and the Self-regard scale are illustrated in Figures 5.12 to 5.14.

Like School scale. In the case of the Like School scale the best predictor of score was teacher's assessment of potential, those students assessed as having the potential for university or tertiary level studies, technical training, and sales or clerical work scoring higher than students assessed as having the potential for unskilled or semi-skilled work only (see Figure 5.12). Among the students assessed in the top four categories the next best predictor was again teacher's assessment of potential, students assessed as having the potential for university or tertiary level studies scoring higher than students assessed as having the potential for technical training or sales or clerical work. In the latter category the best predictor of Like School score was type of school attended, technical school students scoring higher than high school students. Within each of these categories the best predictor of Like School score was degree of Aboriginality, students of predominantly Aboriginal descent or of predominantly Aboriginal or of mixed descent scoring higher than the students of predominantly European descent and

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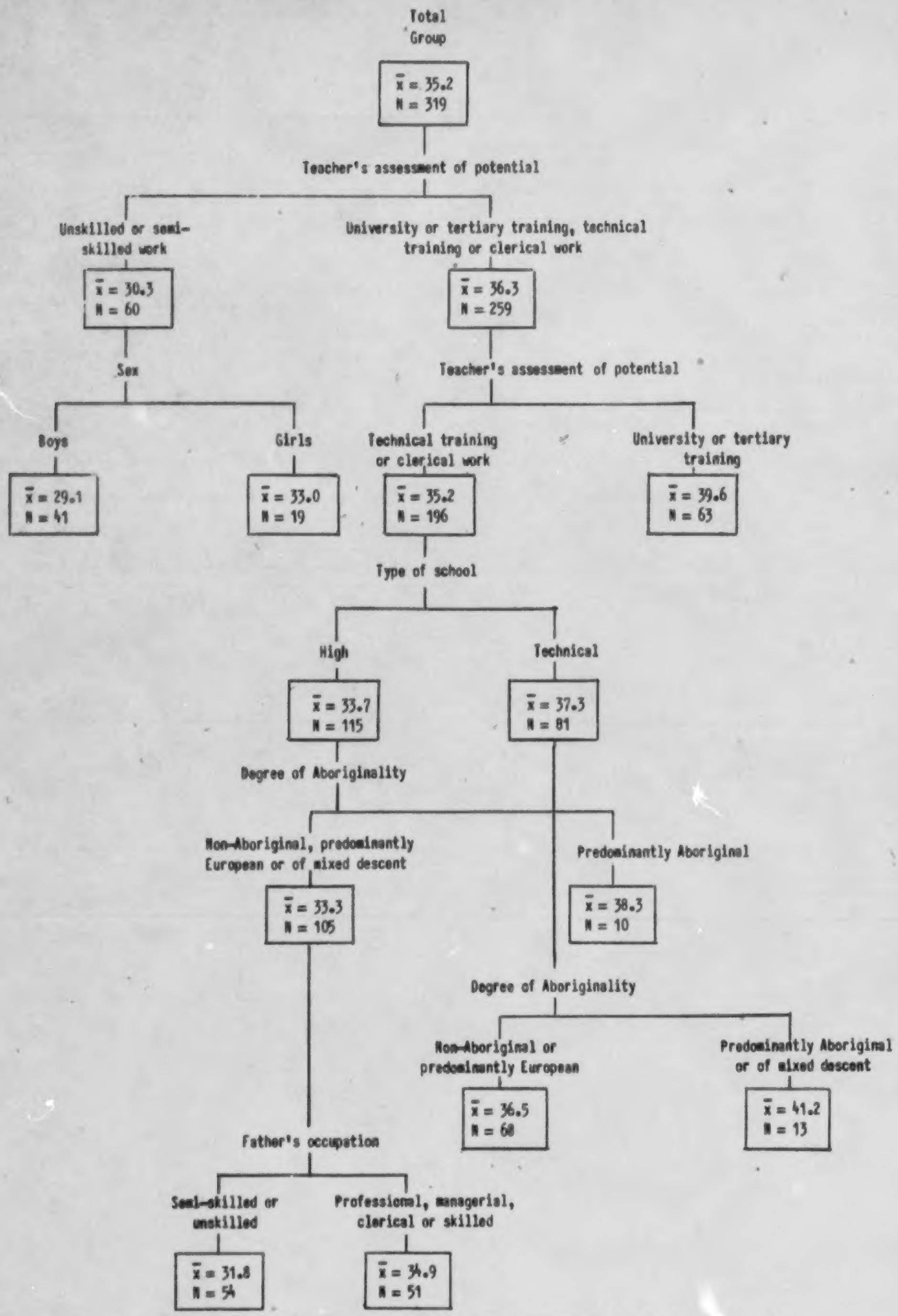
Total Group
x̄ = 35.2
N = 319
Teacher's assessment of potential
Unskilled or semi-skilled work
x̄ = 30.3
N = 60
University or tertiary training, technical training or clerical work
x̄ = 36.3
N = 259
Sex
Boys
x̄ = 29.1
N = 41
Girls
x̄ = 33.0
N = 19
Teacher's assessment of potential
Technical training or clerical work
x̄ = 35.2
N = 196
University or tertiary training
x̄ = 39.6
N = 63
Type of school
High
x̄ = 33.7
N = 115
Technical
x̄ = 37.3
N = 81
Degree of Aboriginality
Non-Aboriginal, predominantly European or of mixed descent
x̄ = 33.3
N = 105
Predominantly Aboriginal
x̄ = 38.3
N = 10
Degree of Aboriginality
Non-Aboriginal or predominantly European
x̄ = 36.5
N = 68
Predominantly Aboriginal or of mixed descent
x̄ = 41.2
N = 13
Father's occupation
Semi-skilled or unskilled
x̄ = 31.8
N = 54
Professional, managerial, clerical or skilled
x̄ = 34.9
N = 51

Figure 5.12 AID Analysis: Background Characteristics of 14-year-old Aboriginal and non-Aboriginal Students as Predictors of Score on the Like School Scale

non-Aboriginal students. Among the non-Aboriginal high school students and those of predominantly European descent or of mixed descent the best predictor of Like School score was father's occupation, students with professional, managerial, clerical and skilled fathers scoring higher than those with unskilled or semi-skilled fathers.

Among the students assessed as having the potential for unskilled or semi-skilled work, the only other significant predictor of Like School score was sex, girls scoring higher than boys.

The final groups distinguished on the AID analysis were ranked in order according to score on the Like School scale. This is shown in Table 5.19.

The highest scoring group were the predominantly Aboriginal or mixed descent students attending technical school and assessed as having the potential for technical training or sales or clerical work.

The next highest scoring groups were the students assessed as having the potential for university or tertiary level studies, the students of predominantly Aboriginal descent attending high school and assessed as having the potential for technical training or for sales or clerical work, and the non-Aboriginal or predominantly European descent students attending technical schools and assessed as having the potential for technical training or sales or clerical work, and students in the same category attending high schools but whose fathers' occupations were in the professional, managerial, clerical or skilled category.

The next highest scoring group were the girls assessed as having the potential for semi-skilled or unskilled work only, and the non-Aboriginal or predominantly European or mixed descent students attending high schools and assessed as having the potential for technical training or sales or clerical work, and whose fathers' occupations were in the unskilled and semi-skilled categories. The lowest scoring group were the boys assessed as having the potential for unskilled or semi-skilled work only.

Academic Motivation scale. In the case of the Academic Motivation scale the best predictor of score for the total group was teacher's assessment of potential, those students assessed as capable of university or tertiary level studies, technical training, or sales or clerical work scoring higher than students assessed as capable of unskilled or semi-skilled work only (see Figure 5.13). Among those students with the higher assessment of potential, the next split was on degree of Aboriginality, students of

Table 5.19 Results of AID Analyses: Ranking of Final AID Groups on Like School Scale

Rank	Description of Group	N	Mean Score
1	Assessed as having the potential for technical training or sales or clerical work, attends technical school, of predominantly Aboriginal or of mixed descent	13	41.2
2	Assessed as having the potential for university or tertiary level studies	63	39.6
3	Assessed as having the potential for technical training or sales or clerical work, attends high school, of predominantly Aboriginal descent	10	38.3
4	Assessed as having the potential for technical training or sales or clerical work, attends technical school, non-Aboriginal or of predominantly European descent	68	36.5
5	Assessed as having the potential for technical training or sales or clerical work, attends high school, non-Aboriginal or of predominantly European descent or of mixed descent, father's occupation professional, managerial, clerical or skilled	51	34.9
6	Assessed as having the potential for unskilled or semi-skilled work only, girl	19	33.0
7	Assessed as having the potential for technical training or for sales or clerical work, attends high school, non-Aboriginal or of predominantly European descent or of mixed descent, father's occupation semi-skilled or unskilled	54	31.8
8	Assessed as having the potential for unskilled or semi-skilled work only, boy	41	29.1

predominantly Aboriginal descent scoring higher than students of mixed descent or of predominantly European descent and non-Aboriginal students. There were no further splits in either of these groups, despite the fact that the latter group was a particularly large group (N=241). This indicates that none of the predictor variables available accounted for a sufficient proportion of the variance to allow a further split of this group. Inspection of the summary table in the AID print-out, which provides information on the proportion of variance explained by each of the predictor variables at each stage of the analysis, indicated that the predictor variables explaining the greatest amount of variance in this group were

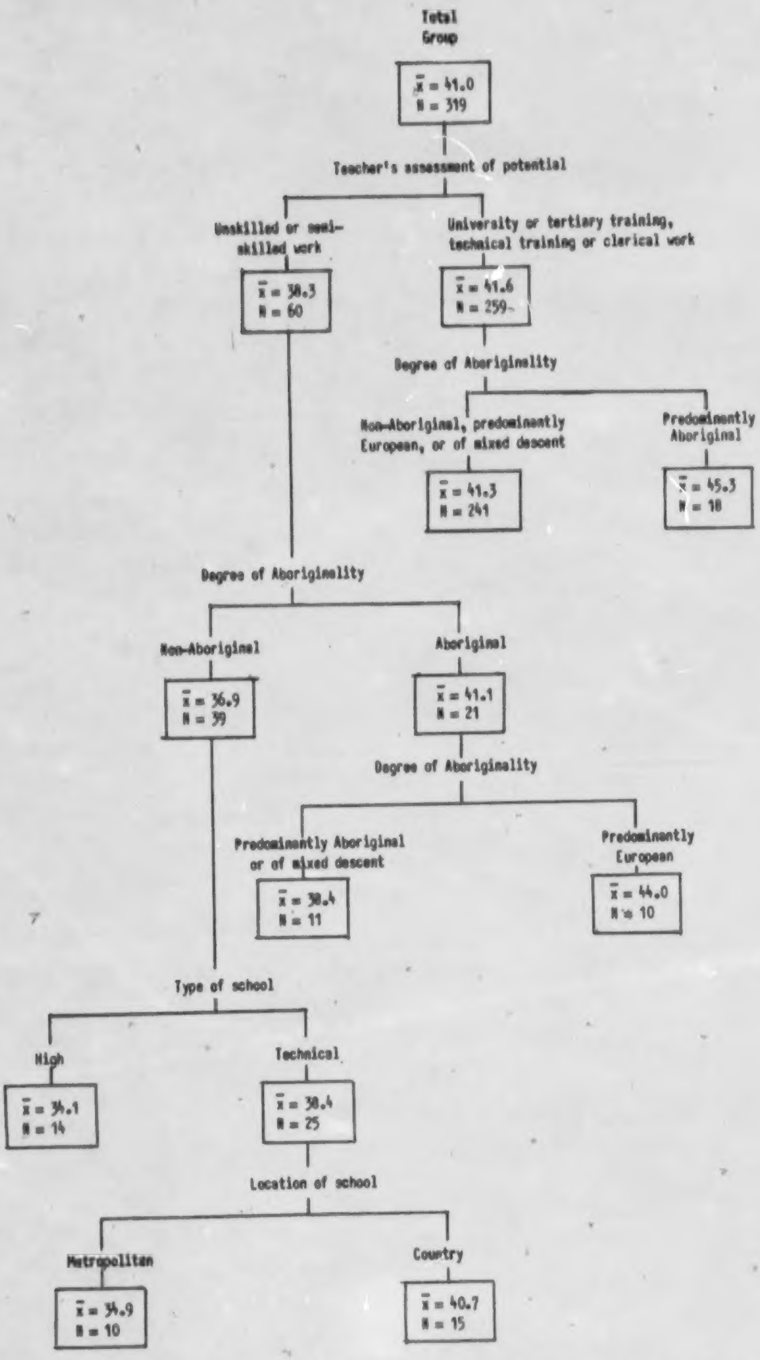
Total Group
x̄ = 41.0
N = 319
Teacher's assessment of potential
Unskilled or semi-skilled work
x̄ = 38.3
N = 60
University or tertiary training, technical training or clerical work
x̄ = 41.6
N = 259
Degree of Aboriginality
Non-Aboriginal, predominantly European, or of mixed descent
x̄ = 41.3
N = 241
Predominantly Aboriginal
x̄ = 45.3
N = 18
Degree of Aboriginality
Non-Aboriginal
x̄ = 36.9
N = 39
Aboriginal
x̄ = 41.1
N = 21
Degree of Aboriginality
Predominantly Aboriginal or of mixed descent
x̄ = 38.4
N = 11
Predominantly European
x̄ = 44.0
N = 10
Type of school
High
x̄ = 34.1
N = 14
Technical
x̄ = 38.4
N = 25
Location of school
Metropolitan
x̄ = 34.9
N = 10
Country
x̄ = 40.7
N = 15

Figure 5.13 AID Analysis: Background Characteristics of 14-year-old Aboriginal and non-Aboriginal Students as Predictors of Score on the Academic Motivation Scale

type of school attended (0.6 per cent) and degree of Aboriginality (0.5 per cent). However, neither of these variances was high enough to split this group further. Among the students assessed as capable of unskilled or semi-skilled work only, the next split was on degree of Aboriginality, in this case the Aboriginal students scoring higher than the non-Aboriginal students. Among the Aboriginal students the next best predictor of academic motivation was again degree of Aboriginality, in this case the students of predominantly European descent scoring higher than the students of mixed descent and the students of predominantly Aboriginal descent. Neither of these groups split any further on the analysis.

Among the non-Aboriginal students the next split was on type of school attended, technical school students scoring higher than high school students, and in the technical school group the best predictor of score was location of school, country students scoring higher than metropolitan students.

The ranking of the final groups distinguished on the AID analysis according to Academic Motivation score is shown in Table 5.20.

The two highest scoring groups on the Academic Motivation scale were the Aboriginal students of predominantly Aboriginal descent who were assessed as having the potential for university or tertiary level studies, technical training, or sales or clerical work, and the Aboriginal students of predominantly European descent assessed as having the potential for semi-skilled or unskilled work only.

The next highest scoring groups were the large group containing the remainder of the students assessed as having the potential for sales or clerical work, technical training, or tertiary or university level studies; the non-Aboriginal students attending country technical schools and assessed as having the potential for semi-skilled or unskilled work only; and the Aboriginal students of predominantly Aboriginal descent or of mixed descent assessed as having the potential for semi-skilled or unskilled work only.

The lowest scoring groups on the Academic Motivation scale were the non-Aboriginal students assessed as having the potential for unskilled or semi-skilled work only, and attending high schools or metropolitan technical schools.

Self-regard scale. In the case of the Self-regard scale the best predictor of score was teacher's assessment of potential, students assessed as having the potential for university or tertiary level studies scoring

Table 5.20 Results of AID Analyses: Ranking of Final AID Groups on Academic Motivation Scale

Rank	Description of Group	N	Mean Score
1	Assessed as having the potential for university or tertiary level studies, technical training, or sales or clerical work, and of predominantly Aboriginal descent	18	45.3
2	Assessed as having the potential for unskilled or semi-skilled work only, and Aboriginal of predominantly European descent	10	44.0
3	Assessed as having the potential for university or tertiary level studies, technical training or sales or clerical work, and non-Aboriginal or Aboriginal of predominantly European descent or of mixed descent	241	41.3
4	Assessed as having the potential for unskilled or semi-skilled work only, non-Aboriginal student attending country technical school	15	40.7
5	Assessed as having the potential for unskilled or semi-skilled work only and of predominantly Aboriginal or of mixed descent	11	38.4
6	Assessed as having the potential for unskilled or semi-skilled work only, non-Aboriginal student attending metropolitan technical school	10	34.9
7	Assessed as having the potential for unskilled or semi-skilled work only, non-Aboriginal student attending high school	14	34.1

higher than students assessed as having the potential for technical training, sales or clerical work, or unskilled or semi-skilled work only (see Figure 5.14). Among the students **assessed as** having the potential for university or tertiary level studies the best predictor of Self-regard score was location of school, metropolitan students scoring higher than country students, and among the country students the best predictor was sex, girls scoring higher than boys.

Location of school was also the best predictor of Self-regard score among the students with a lower assessment of future potential, metropolitan students again scoring higher than country students. Among the country students type of school attended was the best predictor, technical school students scoring higher than high school students. Among the technical students the next split was on degree of Aboriginality, the non-Aboriginal

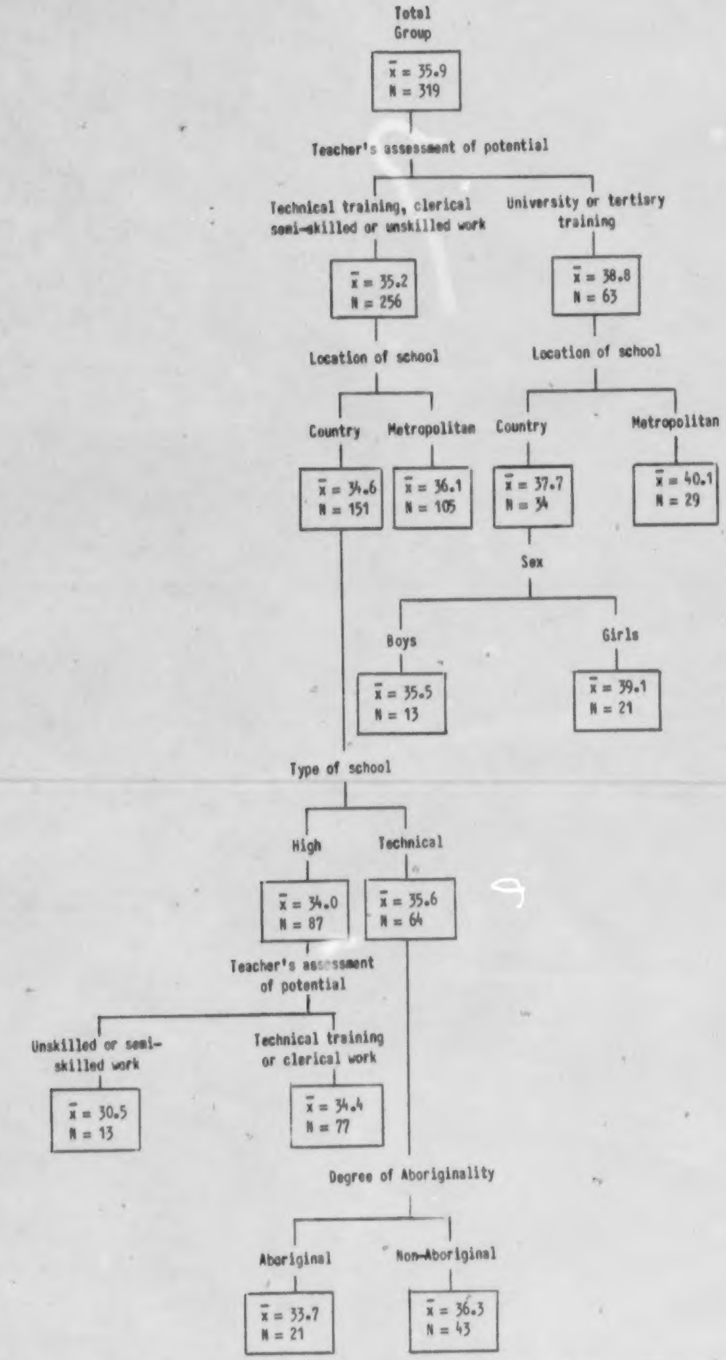
Total Group
x̄ = 35.9
N = 319
Teacher's assessment of potential
Technical training, clerical semi-skilled or unskilled work
University or tertiary training
x̄ = 35.2
N = 256
x̄ = 38.8
N = 63
Location of school
Location of school
Country
Metropolitan
Country
Metropolitan
x̄ = 34.6
N = 151
x̄ = 36.1
N = 105
x̄ = 37.7
N = 34
x̄ = 40.1
N = 29
Sex
Boys
Girls
x̄ = 35.5
N = 13
x̄ = 39.1
N = 21
Type of school
High
Technical
x̄ = 34.0
N = 87
x̄ = 35.6
N = 64
Teacher's assessment of potential
Unskilled or semi-skilled work
Technical training or clerical work
x̄ = 30.5
N = 13
x̄ = 34.4
N = 77
Degree of Aboriginality
Aboriginal
Non-Aboriginal
x̄ = 33.7
N = 21
x̄ = 36.3
N = 43

Figure 5.14 AID Analysis: Background Characteristics of 14-year-old Aboriginal and non-Aboriginal Students as Predictors of Score on the Self-regard Scale

Table 5.21 Results of AID Analyses: Ranking of Final AID Groups on the Self-Regard Scale

Rank	Description of Group	N	Mean Score
1	Assessed as having the potential for university or tertiary level studies, attends metropolitan school	29	40.1
2	Assessed as having the potential for university or tertiary level studies, attends country school, girl	21	39.1
3	Assessed as having the potential for technical training, sales or clerical work, or unskilled or semi-skilled work only, attends country technical school, and non-Aboriginal	43	36.3
4	Assessed as having the potential for technical training, sales or clerical work or unskilled or semi-skilled work only, and attends metropolitan school	105	36.1
5	Assessed as having the potential for university or tertiary level studies, attends country school, boy	13	35.5
6	Assessed as having the potential for technical training or sales or clerical work, attends country high school	77	34.4
7	Assessed as having the potential for technical training, sales or clerical work, or unskilled or semi-skilled work only, attends country technical school, Aboriginal	21	33.7
8	Assessed as having the potential for semi-skilled or unskilled work only, attends country high school	13	30.5

students scoring higher than the Aboriginal students, while among the high school students the next split was on teacher's assessment of potential, students assessed as having the potential for technical training or for clerical or sales work scoring higher than students assessed as capable of unskilled or semi-skilled work only.

The ranking of the final groups distinguished on the AID analysis of Self-regard scores is shown in Table 5.21

The highest scoring groups on the Self-regard scale were the students attending metropolitan schools and assessed as having the potential for university or tertiary level studies, and the girls attending country schools assessed as having the potential for university or tertiary level studies.

The next highest scoring groups were the non-Aboriginal students attending metropolitan schools who were assessed as having the potential for technical training, sales or clerical work, or unskilled or semi-skilled work only.

Following these groups were the boys attending country schools assessed as having the potential for university or tertiary level studies, the country high school students assessed as having the potential for technical training or sales or clerical work, and the Aboriginal students attending country technical schools and assessed as having the potential for technical training, sales or clerical work, or unskilled or semi-skilled work.

The lowest scoring group were the students assessed as having the potential for unskilled or semi-skilled work only and attending country high schools.

In the case of the attitude scales the most important predictor of score was therefore teacher's assessment of future potential. There was also some trend for Aboriginal students to score higher on the Like School and Academic Motivation scales than non-Aboriginal students, for girls to score higher than boys on the Like School and Self-regard scales, and for technical school students to score higher than high school students on all the scales. On the Academic Motivation scale the trend was for country students to score higher than metropolitan students, but on the Self-regard scale the tendency was for the metropolitan students to score higher than the country students.

Summary of Results

The results of the secondary school testing program indicated significant differences in achievement between Aboriginal and non-Aboriginal students. The Aboriginal students scored consistently lower on tests of general ability and achievement in reading and mathematics than the non-Aboriginal students selected from the same schools as the Aboriginal students. The differences between the Aboriginal group and the random sample of non-Aboriginal students (the age match group) were highly significant on all the tests administered, but the differences between the Aboriginal students and the lower ability non-Aboriginal group (the ability match group) were significant only on the IQ score of the Standard Progressive Matrices, the mathematics test and the vocabulary score of the reading test.

Comparisons of the distribution of scores for the Aboriginal and non-Aboriginal groups with expected distributions based on available norms indicated a high proportion of the Aboriginal students scoring in the below average categories and relatively few Aboriginal students scoring in the above average categories, particularly on the reading test. In the case of the Standard Progressive Matrices the scores of the non-Aboriginal groups approximated the expected distribution of scores, but on the reading test the scores of the non-Aboriginal groups also tended to concentrate in the average and below average categories on the basis of the Victorian Form 3 norms. However, when the distributions of scores on the reading test were compared with the Victorian Form 2 norms, it was found that the scores of the age match group approximated the expected distribution for Victorian Form 2 students, but the scores of the Aboriginal and ability match groups were still lower than expected for Victorian Form 2 students.

In the case of the mathematics test the average facility levels for groups of items and for the total score were compared with those of the IEA sample of Australian 13-year-old students tested in 1964. The average facility levels for the age match group were similar to those of the IEA 13-year-old sample, but those of the Aboriginal group and the ability match group were lower, and on some groups of items the average facility levels of the Aboriginal students were only slightly higher than would be expected by chance. The relative difficulty of the different groups of items were similar for all groups.

The results of the teacher ratings of students' achievement in the basic subject areas confirmed the pattern of performance of the Aboriginal and non-Aboriginal groups revealed by the test scores, but the trend was for the teacher ratings to place rather more of the Aboriginal students in the average and above average categories than would be expected on the basis of the test scores.

Teacher assessments of the students' future educational or occupational potential indicated that over half the students in all groups were assessed as capable of some form of post-secondary training, including technical training as an apprentice, or some form of tertiary study. The proportion of students in each assessment category was similar for the Aboriginal and non-Aboriginal groups, but with some trend for a higher proportion of the age match students to be assessed in the higher categories and a lower proportion in the unskilled or semi-skilled category.

The results on the attitude scales indicated no significant differences in attitude scores between the Aboriginal and the age match group, but some trend for the ability match group to score lower on the attitude scales than the other groups, particularly on the Academic Motivation scale. The scores on the attitude scales of the Aboriginal and non-Aboriginal groups in this study were similar to those reported by Keeves (1974) for a Canberra Form 1 population, indicating that the attitudes to school and self of the students in this study are probably similar to those that would be expected in any average group of Australian students.

CHAPTER 6

EDUCATIONAL AND OCCUPATIONAL ASPIRATIONS, HOME BACKGROUND AND SCHOOL LEAVING PATTERNS

Results of the Interview and the Home Background Questionnaire

In the interview students' attitudes to school and aspirations were explored further, and questions on parental aspirations were also included. The home background questionnaire was designed to obtain information on homework and recreational activities undertaken in the home, and the extent of parental interest in and encouragement of such activities.

Results of the interview

Attitude to school. The first question in the interview was a direct question on whether or not students liked school. Responses to this question were classified into four categories as indicated in Table 6.1. The percentage of responses in each category for each group is shown in Table 6.1.

The majority of students in all groups stated that they liked school, or gave a qualified response indicating that they liked school most of the time, or except for some specific subjects or activities. Relatively few students stated definitely that they did not like school, or gave a qualified negative response indicating that on the whole they disliked school more than they liked it, although they might like some aspects of school. The proportion of Aboriginal students giving a negative response on this question was lower than the proportion of non-Aboriginal students.

Comparing the results on this question with the responses to the item 'I don't like school' on the attitude questionnaire (see Figure 5.6) a higher proportion of negative responses were found on the attitude questionnaire than in the interview, suggesting that the interview situation may tend to inhibit negative responses.

Subjects liked and disliked. Students were also asked what their favourite subjects at school were, and which subjects they liked least.

Favourite subjects most frequently mentioned by the Aboriginal students were art, English and social studies, those most frequently mentioned by the ability match group were English, social studies, woodwork and other trade subjects, while those most frequently mentioned by the age match group were

Table 6.1 Student's Attitude to School: Percentage of Responses in each Category to Question as to whether or not Student Likes School

Group	N	Responses to Like-School Question			
		Yes	Yes: Qualified	No	No: Qualified
Aboriginal	95	76	20	2	2
Ability Match	103	61	21	11	7
Age Match	103	74	14	8	5

mathematics and English. However, when favourite subjects were looked at as a proportion of the students actually taking the subject, subjects such as cooking, woodwork and other trade subjects were most frequently mentioned by students taking these subjects, and in the Aboriginal and ability match groups typing was also frequently mentioned as a favourite subject.

Subjects most frequently mentioned as the least liked subjects in all groups were mathematics, social studies and science, with mathematics being more frequently mentioned as the least liked subject in the Aboriginal and ability match groups than in the age match group. These subjects remained as the highest proportion of disliked subjects mentioned when responses were looked at as a proportion of the students actually taking the subjects.

Educational aspirations. Students were asked both when they expected to leave school and when they would like to leave school. The expected and desired attainment levels for students in each group are shown in Table 6.2.

In all groups the desired attainment level tended to be higher than the expected attainment level, with a higher proportion of students wanting to complete Form 5 or Form 6 than actually expecting to complete Form 5 or Form 6. The majority of students in all groups either wanted or expected to complete Form 5 or Form 6, the ability match group showing the lowest expected and desired attainment levels, with 47 per cent of students expecting to complete Form 5 or Form 6, and 54 per cent of students wanting to complete Form 5 or Form 6. A higher proportion of students in the ability match group also expected to complete only Form 2 or Form 3 (22 per cent), but a higher proportion of the Aboriginal students indicated that they wanted to complete only Form 2 or Form 3 (17 per cent).

Students were also asked why they expected to leave school or why they

Table 6.2 Expected and Desired Attainment Levels: Percentage of Students in each Category

Group	N	Attainment Levels Complete Form 2 or 3	Complete Form 4	Complete Form 5	Complete Form 6
Aboriginal:					
Expected Attainment	90	12	37	27	24
Desired Attainment	85	17	24	33	27
Ability Match:					
Expected Attainment	96	22	31	29	18
Desired Attainment	100	14	32	33	21
Age Match:					
Expected Attainment	97	7	27	31	33
Desired Attainment	102	4	25	35	36

wanted to leave school at the level indicated. Overall the reasons for wanting or expecting to stay on at school were related mainly to obtaining job qualifications, educational qualifications or special skills, while reasons for wanting or expecting to leave school earlier were related to wanting to get a job, or to the fact that the student was not doing well at school, did not like school, or was bored at school. The reasons given were similar for Aboriginal and non-Aboriginal students, although Aboriginal students were less likely to mention not doing well at school as a reason for leaving earlier, and age was mentioned more frequently as a reason for wanting to leave school by the ability match group than by either of the other groups.

Occupational aspirations. Students were also asked what they would like to do when they left school, and what they expected to do when they left school. Responses were classified in terms of the occupational ranking of the job mentioned. The percentage of responses in each category on the Broom, Jones and Zubrzycki scale for desired and expected occupations is shown in Table 6.3.

In all groups there were a higher proportion of students wanting a professional job than expecting a professional job, with the age match group showing the highest proportion of students who both wanted and expected a professional job and the ability match group the lowest proportion of students who both wanted and expected a professional job. There was little difference between the proportion of students wanting and expecting clerical

Table 6.3 Ranking of Expected and Desired Occupations: Percentage of Responses in each Category

Group	N	Occupational Ranking 1 Professional	 2 Managerial	 3 Clerical	 4 Skilled	 5 Semi-skilled	 6 Unskilled
Aboriginal:							
Expected Occupation	69	26	3	21	21	18	12
Desired Occupation	82	35	1	22	24	8	10
Ability Match:							
Expected Occupation	75	20	3	24	28	15	10
Desired Occupation	92	25	2	24	29	10	10
Age Match:							
Expected Occupation	74	36	4	18	18	8	16
Desired Occupation	88	44	2	13	22	2	17

and skilled jobs in the Aboriginal and ability match groups, the ability match group tending to have slightly higher proportions of desires and expectations in these categories than the Aboriginal group. The age match group showed a lower proportion of students wanting a clerical job than expecting a clerical job, and a higher proportion of students wanting a skilled job than expecting a skilled job, but these differences were not very great. All groups showed a higher proportion of students expecting a semi-skilled job than wanting a semi-skilled job, but there was little difference in any of the groups between the proportions of students expecting and wanting unskilled jobs. Surprisingly it was the age match group, who generally scored highest on the achievement tests, who showed the highest proportion of students both wanting and expecting an unskilled job.

Perhaps the most interesting aspect of these findings is that there does not seem to be any very marked discrepancies between expected and desired occupations. While there might be some slight trend for students to want a slightly higher ranking occupation than they expect, there is no indication that the majority of students are wanting to get a high ranking professional job but expecting only an unskilled or semi-skilled job. However, the

Table 6.4 Parental Aspirations: Classification of Parental Job Preferences for Students: Percentage of Responses in each Category

		Classification of Job Choice				
Group	N	Profes-sional	Managerial or Clerical	Skilled	Unskilled or Semi-skilled	'Up to the student' Responses
Aboriginal:						
Mother's Choice	67	27	21	12	6	34
Father's Choice	60	24	20	12	6	38
Ability Match:						
Mother's Choice	85	14	21	25	3	37
Father's Choice	79	14	25	27	2	32
Age Match:						
Mother's Choice	87	27	12	15	4	41
Father's Choice	80	23	13	15	3	47

proportion of students both expecting and desiring a professional occupation is probably unrealistically high in all groups.

A further question on whether or not students would be prepared to undergo further training on leaving school was also asked. Very few students indicated that they would not be prepared to undergo further training, and types of training mentioned usually related to their job aspirations or expectations.

Parental aspirations. In order to obtain some indication of parental aspirations, students were asked what sort of job they thought their parents would like them to take up, and when they thought their parents wanted them to leave school. Separate questions were asked to obtain mother's preferences and father's preferences.

Responses to these questions are shown in Table 6.4 and Table 6.5. In the case of job aspirations (Table 6.4), parental choices were classified into four main categories: professional, managerial or clerical, skilled, and unskilled or semi-skilled. A fifth category for responses which indicated that parents preferred to leave the choice to the student ('up to the student' responses) was also distinguished.

Parental aspirations as perceived by the student tended to be higher for the Aboriginal and age match groups than for the ability match group.

Table 6.5 Parental Aspirations for Students' Educational Attainment Levels: Percentage of Responses in each Category

Group	N	Attainment Level					
		Leave at 15	Complete Form 2 or 3	Complete Form 4	Complete Form 5	Complete Form 6	'Up to student' or 'Depends on results'
Aboriginal:							
Mother's Preference	85	1	1	14	15	62	6
Father's Preference	72	1	1	14	14	67	3
Ability Match:							
Mother's Preference	99	9	3	21	18	37	11
Father's Preference	91	9	3	20	16	35	12
Age Match:							
Mother's Preference	97	1	1	8	28	48	13
Father's Preference	93	3	0	13	23	52	11

In the case of occupational aspirations, a higher proportion of parental choices for professional occupations were found in the Aboriginal and age match groups than in the ability match group, while in the ability match group there were a higher proportion of parental choices in the skilled category. Relatively few responses indicated parental preferences for unskilled or semi-skilled jobs, but there were a substantial proportion of responses in all groups in the 'up to the student' category, indicating that many parents preferred to leave the choice of an occupation to the student.

In the case of educational aspirations (Table 6.5), relatively few students saw their parents as wanting them to leave school at the age of 15 years or after the completion of Form 2 or Form 3, but of those who did the majority were in the ability match group. The proportion of students who saw their parents as wanting them to complete Form 6 was higher in the Aboriginal group than in either of the other groups, with over 60 per cent of students in this category in the Aboriginal group as compared with about half in the age match group and about one-third in the ability match group. A few students indicated that their parents saw their school leaving as dependent on their school results, or that this was up to the student to decide. Responses in these categories were more frequent in the non-Aboriginal groups than in the Aboriginal group.

Comparing parental aspirations with those of the students, it would appear that in general parental aspirations with regard to school leaving and future occupation tend to be higher, or to be seen as higher by the students, than the aspirations of the students themselves. A higher proportion of students see their parents as wanting them to complete Form 6 than express the desire to complete Form 6 themselves, and a higher proportion of parental job choices, when a specific choice is indicated, are in the professional, managerial or clerical categories than in the case of the student choices. Also a higher proportion of students indicate a preference for an unskilled or a semi-skilled job than is found in the case of parent choices.

Thus overall these results suggest that parental aspirations with regard to school leaving and future occupation tend to be higher, or to be seen as higher by the students, than the aspirations of the students themselves. This is true for all groups, but tends to be more marked in the Aboriginal group than in the non-Aboriginal groups.

Results of the Home Background Questionnaire

Responses to the Home Background Questionnaire are shown in Table 6.6

Hours of homework. The majority of students in all groups indicated that they did only up to two hours of homework each week. Relatively few students indicated that they did over five hours of homework a week, but the proportion of students indicating that they did more than five hours of homework a week was higher in the age match group than in the other two groups.

Place of homework. The majority of students indicated that they did their homework alone or in a quiet room. The proportion of students indicating that they did their homework in a noisy room was lower in the Aboriginal group (8 per cent) than in the non-Aboriginal groups (19 and 21 per cent). This is probably contrary to expectation. A few students indicated that they did their homework at school, and some students stated that they had no homework.

Parents' help with homework. The proportion of students who indicated that their parents often helped them with their homework was similar in the three groups, with the lowest proportion of responses in this category in the Aboriginal group (17 per cent) and the highest proportion in the ability match group (23 per cent). The majority of students in all groups indicated that their parents only occasionally or hardly ever or never helped them with their homework, the proportion of responses in the 'hardly ever or

Table 6.6 Responses on Home Background Questionnaire

Item	Percentage of Responses on each Item		
	Aboriginal Group (N = 98)	Ability Match Group (N = 103)	Age Match Group (N = 103)
1 Hours of homework per week			
1 Up to 2 hours	61	69	57
2 2 to 5 hours	28	23	26
3 5 to 10 hours	9	7	13
4 10 to 20 hours	2	1	3
5 Over 20 hours	0	0	0
2 Place of homework			
1 Noisy room	8	21	19
2 Quiet room	37	21	28
3 Alone	51	51	43
4 At school	2	2	4
5 No homework	7	5	6
3 Parents' help with homework			
1 Often	17	23	21
2 Occasionally	36	35	28
3 Hardly ever or never	38	36	43
4 No homework	9	6	8
4 Use of dictionary in the home			
1 Often	25	28	32
2 Occasionally	51	57	59
3 Never, or no dictionary at home	25	15	9
5 Parents' encouragement of reading			
1 As much as possible	21	20	28
2 Sometimes	32	44	46
3 No encouragement	47	37	26
6 Parents' interest in school			
1 Always ask about schoolwork	34	25	27
2 Sometimes ask about schoolwork	36	53	57
3 Hardly ever or never ask about schoolwork	31	21	16
7 Number of books in the home			
1 None	11	3	0
2 1-10	23	10	1
3 11-25	10	9	10
4 26-50	17	21	21
5 More than 50	40	57	68
8 Hours of reading in last week			
1 None	27	12	18
2 Up to 1 hour	38	28	30
3 1-2 hours	12	21	15
4 2-3 hours	9	16	14
5 More than 3 hours	13	23	24
9 Hours per week watching television			
1 None	1	4	2
2 Up to 5 hours	27	20	20
3 5-10 hours	18	18	29
4 10-20 hours	34	37	27
5 Over 20 hours	20	22	21
10 Hours per week listening to radio			
1 None	21	11	12
2 Up to 5 hours	52	52	52
3 5-10 hours	18	22	21
4 10-20 hours	9	11	9
5 Over 20 hours	1	4	6

never' category being rather higher in the age match group than in the other groups. This is a little surprising in view of the fact that the age match group was the highest achieving group, but a possible explanation for this trend could be that the poorer performing students were more in need of their parents' help and more likely to seek it or to receive it, while students who felt that they were coping adequately with their work did not feel that they needed their parents' help.

Use of dictionary in the home. There was a fairly clear trend for more frequent use of a dictionary in the home in the age match group than in the Aboriginal group, the ability match group falling between these two groups. Just over half the students in all groups indicated that they occasionally used a dictionary at home, but a higher proportion of students in the age match group indicated that they often used a dictionary in the home (32 per cent as against 25 per cent in the Aboriginal group), whereas a higher proportion of Aboriginal students indicated that they never used a dictionary at home or that they did not have a dictionary at home (25 per cent as against only 9 per cent in the age match group).

Parents' encouragement of reading. There was a fairly clear trend for students in the non-Aboriginal groups, and particularly the age match group, to indicate greater parental encouragement of reading than students in the Aboriginal group. A higher proportion of the Aboriginal students indicated that their parents gave them no encouragement to read, while a higher proportion of the non-Aboriginal students indicated that their parents sometimes encouraged them to read or encouraged them to read as much as possible.

Parents' interest in school. Aboriginal students tended to have a higher proportion of responses in the two extreme categories on this question ('always ask about schoolwork' and 'never ask about schoolwork') than the non-Aboriginal students, who tended to have a higher proportion of responses in the middle category ('sometimes ask about schoolwork'). This suggests that the parents of non-Aboriginal students generally show a moderate interest in their children's schooling, whereas Aboriginal parents are more likely to be either very interested in their children's schooling or to show very little interest.

Number of books in the home. The number of books in the home was generally greater for the non-Aboriginal students than for the Aboriginal students. A higher proportion of the Aboriginal students indicated that they had no books at home or only up to ten books at home, while the majority of the non-Aboriginal students indicated that they had more than 50 books at home.

Hours of reading. The Aboriginal students also indicated that they spent less time reading than the non-Aboriginal students. A higher proportion of the Aboriginal students indicated that they had spent no time or only up to one hour reading in the last week, whereas a higher proportion of the non-Aboriginal students indicated that they had spent two or more hours reading in the last week. However, the amount of time spent on reading in all groups was very low, with 77 per cent of the Aboriginal students and over 60 per cent of the non-Aboriginal students indicating that they had spent two hours or less on reading in the previous week.

Television viewing. The amount of time spent watching television seemed to be similar for the three groups, with about 50 to 60 per cent of students in all groups indicating that they watched television for 10 hours or more a week and over 70 per cent indicating that they watched television for five hours or more a week. The amount of time spent watching television was therefore much greater than the amount of time spent reading.

Radio listening. The time spent listening to radio each week was in all groups much less than the time spent watching television. The majority of students in all groups indicated that they spent up to five hours a week listening to radio, but a substantial proportion of students, particularly in the Aboriginal group, indicated that they did not listen to the radio at all. Relatively few students indicated that they spent more than ten hours a week listening to radio.

Summary. Overall the home background questionnaire did not reveal any very marked differences between Aboriginal and non-Aboriginal students in homework patterns, parental help and encouragement, and television viewing and radio listening patterns in the home. The main differences that did emerge related to reading patterns, with the Aboriginal students generally tending to spend less time on reading, to have less parental encouragement to read, to have fewer books in the home, and to be less likely to make use of a dictionary.

Subjects taken at school

As an introductory question on the home background questionnaire students were asked to list the subjects that they were taking at school. The main purpose of this information was to determine whether there were any differences between the Aboriginal students and the non-Aboriginal students in the type of subjects taken at school.

An analysis of this information indicated no marked differences in the subjects taken by Aboriginal and by non-Aboriginal students, but a fairly regular pattern of subjects taken according to type of school attended and sex.

Virtually all students took the core subjects of English, mathematics, social science and science, with a tendency for high school students to take the specific subjects of history and geography while technical school students took a general social studies course.

Additional subjects taken by high school students generally included art or craft, sport or physical education, commercial subjects such as consumer education or typing, and woodwork in the case of boys or a home economics subject in the case of girls.

Additional subjects taken by technical school students also included art or craft and sport or physical education, and specialized and trade subjects such as solid geometry, technical drawing, woodwork, sheetmetal, and fitting and turning in the case of boys, and commercial or home economics subjects such as typing, home economics, cooking and needlecraft in the case of girls.

Exceptions to this pattern of subjects were found, particularly among students attending community schools or in some of the country schools, where subjects such as talking, writing, wide reading and language studies were mentioned in place of English, and other subjects such as current affairs, environmental studies, library work, or film and TV were mentioned. An example of subjects listed by a student attending a community school was 'mosaic, current events, drama, cooking, talking, history of art, history (Stuarts), enamelling, Batik, writing, painting, geology, and doing time'. Another student attending the same school listed 'Italian, English, sewing and writing', while a third student listed only 'English, art, and drama'. However, such exceptions were few and most students were taking a balanced range of subjects.

These results indicated no marked differences in subjects taken by Aboriginal and by non-Aboriginal students in this sample. However, differences in subjects taken according to type of school attended were found, and in so far as a higher proportion of Aboriginal students attend technical schools as compared with the Victorian secondary school population as a whole, the subjects taken by Aboriginal students would tend to differ from those of non-Aboriginal Victorian students, with a higher proportion of Aboriginal students taking technical school subjects, including trade subjects in the case of boys and home economics subjects in the case of girls, than would be the case for the Victorian secondary school population as a whole.

School Leaving Patterns and Factors Related to School Leaving

Description of school leavers

In April 1974 information on school leaving for the students in the sample tested [illegible] 1973 was obtained from the schools. Schools were asked to indicate for each student whether the student was still attending school in 1974, and in the case of students who had left school whether the student had transferred to another school or had left school for employment. If students had left school for employment teachers were asked to indicate, where known, the type of job taken.

School leaving and form level. The percentage of school leavers at each form level and the total percentage of school leavers in each group is shown in Table 6.7.

The total percentage of school leavers was higher in the Aboriginal group than in the non-Aboriginal groups, and was higher in the ability match group than in the age match group, with 32 per cent of the Aboriginal students, 28 per cent of the ability match students and 21 per cent of the age match students having left school by the end of the first term of 1974.

In the Aboriginal and the ability match groups the proportion of students leaving school increased from Form 2 to Form 4, while in the age match group the highest proportion of school leavers was found at the Form 4 level, but the proportion of school leavers at the Form 2 level was higher than the proportion at the Form 3 level. The number of Form 2 students in this group was relatively low, and this group would be an atypical group of students in so far as they would be older than the average Form 2 student, and probably of lower ability. This could explain the higher drop-out at the Form 2 level in this group.

The drop-out rate for the Form 3 students is of particular interest to note, since the majority of the students in all groups were at this form level, and continuation into Form 4 and completion of Form 4 is particularly important for future occupational choice and opportunities for further training. In the Aboriginal group the drop-out rate for the Form 3 students was 36 per cent, while that for the Form 3 ability match students was 22 per cent and that for the Form 3 age match students was 12 per cent. In other

Table 6.7 Follow-up of Students in 1974: Percentage of Schools Leavers at each Form Level and in each Group

	Aboriginal Group		Ability Match Group		Age Match Group	
Form Level	N	% School Leavers	N	% School Leavers	N	% School Leavers
Form 1 or 2	32	22	21	19	15	27
Form 3	61	36	67	22	60	12
Form 4 or 5	15	40	16	63	30	37
Total	108	32	104	28	105	21

words, while 88 per cent of the Form 3 age match students and 78 per cent of the Form 3 ability match students continued into Form 4, only 64 per cent of the Aboriginal Form 3 students continued into Form 4. The drop-out rate at this critical level was therefore much higher for the Aboriginal students than for the non-Aboriginal students.

School leaving and location of school. In the Aboriginal group there was no difference in the proportion of school leavers from country and metropolitan schools, with 33 per cent of students in country schools leaving school and 34 per cent of students in metropolitan schools. Among the non-Aboriginal students there was a slight trend for a higher proportion of school leavers from metropolitan schools, with 27 per cent of metropolitan students leaving school as compared with 22 per cent of country students.

Among the country students there was some trend in the Aboriginal group for a higher proportion of school leavers in the northern area, with 41 per cent of students in the northern district leaving school as compared with 29 per cent in the eastern district and 22 per cent in the western district. Among the non-Aboriginal students, however, the school leaving rate was highest for the western area, with 39 per cent of students in the western district leaving school, compared with 16 per cent in the northern district and 15 per cent in the eastern district.

School leaving and type of school attended. In the Aboriginal group there was little difference in the percentage of school leavers from state high schools and state technical schools, with 36 per cent of students from high school and 35 per cent of students from technical school leaving school.

Table 6.8 School Leaving and Teacher's Assessment of Potential: Percentage of School Leavers in each Category

Teacher's Assessment of Potential	Aboriginal Group		Non-Aboriginal Group	
	N	% School Leavers	N	% School Leavers
1 University course	1	0	12	0
2 Other tertiary course	13	8	38	3
3 Technical training	52	31	93	19
4 Sales or clerical work	20	40	35	46
5 Semi-skilled or unskilled work	19	53	25	52
Total	105		203	

Among non-Aboriginal students there was a tendency for a higher drop-out rate from technical schools, with 31 per cent of technical school students leaving school as compared with only 20 per cent of high school students.

In both groups the proportion of school leavers in Catholic schools was much lower, with none of the six Aboriginal Catholic school students leaving school, and only one of the twelve non-Aboriginal Catholic school students leaving school.

School leaving and sex. In the Aboriginal group there was some tendency for a higher proportion of school leavers among the girls than the boys, with 35 per cent of the girls leaving school as compared with 31 per cent of the boys. Among the non-Aboriginal students there was no difference in the school leaving rate of boys and girls.

School leaving and teacher's assessment of potential. In both groups there was a marked relationship between teacher's assessment of potential and school leaving (see Table 6.8). The drop-out rate was much higher for students with a lower assessment of potential than for students with a higher assessment of potential. The drop-out rate for Aboriginal and non-Aboriginal students in each assessment category was similar, except in the case of the technical training category, where the drop-out rate was higher for Aboriginal students (31 per cent) than for non-Aboriginal students (19 per cent).

Table 6.9 School Leaving and Father's Occupation: Percentage of School Leavers in each Category

Father's Occupation	Aboriginal Group		Non-Aboriginal Group	
	N	% School Leavers	N	% School Leavers
Professional, Managerial or Clerical	9	33	74	8
Skilled	8	38	48	35
Semi-skilled	26	23	42	24
Unskilled	23	22	23	30
Unclassified or Unknown	42	45	11	48
Total	108		198	

School leaving and father's occupation. There was also some relationship between father's occupation and school leaving. This is shown in Table 6.9. In this case the three higher occupational categories have been combined (professional, managerial and clerical), and because of the high proportion of cases in which father's occupation was unknown, the school leaving rate for this group of students is also shown.

In the Aboriginal group the drop-out rate tended to be higher among students whose father's occupations were in the professional, managerial, clerical or skilled categories than among students whose father's occupations were in the semi-skilled or unskilled categories. This is contrary to expectation. However the number of cases in which father's occupation was in the professional, managerial or clerical categories (N=9) and in the skilled category (N=8) was very small, so these figures may not give a reliable indication of the drop-out rate for Aboriginal students from higher occupational backgrounds.

Among the non-Aboriginal students the lowest drop-out rate was found among students from professional, managerial, or clerical backgrounds (8 per cent), but the drop-out rate for students from skilled backgrounds was higher than the drop-out rate for students from semi-skilled or unskilled backgrounds (35 per cent as against 24 and 30 per cent). There was therefore not a consistent relationship between occupational background and school leaving for either the Aboriginal or the non-Aboriginal students. However, in both

Table 6.10 School Leaving and Expected and Desired Attainment Levels: Percentage of School Leavers in each Category

Expected Time of Leaving School	Aboriginal Group		Non-Aboriginal Group	
	N	% School Leavers	N	% School Leavers
End of year	11	82	40	70
End Form 2 or Form 3	4	50	2	50
End Form 4	29	31	40	17
End Form 5 or Form 6	46	17	108	9
Don't know	18	44	18	22
Desired Attainment Level				
Complete Form 2 or Form 3	14	79	17	65
Complete Form 4	20	35	56	36
Complete Form 5 or Form 6	51	18	126	12
Don't know	23	39	9	44

In the Aboriginal group there was a stronger relationship between expected occupation and school leaving than between desired occupation and school leaving, with a much lower proportion of school leavers among students who expected a professional or skilled occupation than among students who expected a managerial or clerical occupation or an unskilled or semi-skilled occupation. This relationship was less marked in the case of desired occupation, although a lower proportion of school leavers was found among students who expressed a desire for a professional occupation.

In the case of the non-Aboriginal students the relationship between expected occupation and school leaving and desired occupation and school leaving was similar, with a lower proportion of school leavers among students who either expected or desired a professional occupation than among students who expected or desired a managerial, clerical, skilled, semi-skilled or unskilled occupation.

The main difference between the Aboriginal and the non-Aboriginal students was in the proportion of school leavers among students who expected a managerial or clerical occupation and those who expected a skilled occupation. In the case of the Aboriginal students the proportion of school leavers was higher among students who expected a managerial or clerical occupation than among students who expected a skilled occupation, while in the case of the non-Aboriginal students the opposite was found, the proportion of school leavers being higher among students who expected groups the highest drop-out rate was found among students whose father's occupation was not known or not classified. This category would include students who had already left school at the time of the interview or who were absent from school, and in the Aboriginal group would also include a number of students from one-parent families or from families in which the father was unemployed or on a pension.

School leaving and working status of mother. In both the Aboriginal and the non-Aboriginal groups the proportion of school leavers was higher among students whose mothers were not working than among students whose mothers were working. This trend was particularly marked in the Aboriginal group, where the percentage of school leavers in cases where the mother was working was 15 per cent, as compared with 37 per cent in cases where the mother was not working. Among the non-Aboriginal students the percentage of school leavers was 21 per cent in cases where the mother was working and 25 per cent in cases where the mother was not working.

School leaving and expected and desired attainment levels. The relationship between school leaving and expected and desired attainment levels is shown in Table 6.10. There was a clear relationship for both Aboriginal and non-Aboriginal students between expected and desired attainment levels and school leaving. The percentage of school leavers among students who had indicated that they expected to leave school at the end of the year or expected to complete Form 2 or Form 3 only was much higher than the percentage of school leavers among students who had indicated that they expected to complete Form 4, Form 5 or Form 6. There was also a clear relationship between desired attainment level and school leaving, the percentage of school leavers being much lower among students who had indicated that they would like to complete Form 5 or Form 6 than among students who had indicated that they would like to complete Form 4, Form 3 or Form 2. The percentage of school leavers also tended to be relatively high among students who had indicated that they did not know when they intended to leave school or did not know what form level they would like to complete.

School leaving and expected and desired occupation. The relationship between school leaving and expected and desired occupation is shown in Table 6.11.

Table 6.11 School Leaving and Expected and Desired Occupation: Percentage of School Leavers in each Category

	Aboriginal Group		Non-Aboriginal Group	
Expected Occupation	N	% School Leavers	N	% School Leavers
Professional	18	6	40	10
Managerial or Clerical	16	44	35	26
Skilled	14	14	34	38
Semi-skilled or Unskilled	20	50	35	37
Don't know or Unknown	40	40	64	17
Desired Occupation				
Professional	27	22	60	7
Managerial or Clerical	18	33	36	28
Skilled	19	32	44	30
Semi-skilled or Unskilled	14	36	34	41
Don't know or Unknown	30	43	34	26

a skilled occupation than among students who expected a managerial or clerical occupation. Possibly the early school leavers among the Aboriginal students who expected a managerial or clerical position were disappointed in their hopes, since these students would not have obtained the educational level normally required for such positions.

School leaving and family size. There was some tendency for a relationship between family size and school leaving, with a higher drop-out rate for Aboriginal students from very large families, 41 per cent of students with six or more siblings leaving school as compared with 30 per cent of students with up to three siblings leaving school. Among the non-Aboriginal students there was also a tendency for a higher drop-out rate for students from larger families, with 27 per cent of students with more than three siblings leaving school as compared with 15 per cent of students with up to two siblings leaving school. There was also some trend for a lower proportion of school leavers among first-born and second-born children than among later-born children in both the Aboriginal and the non-Aboriginal groups.

School leaving and degree of Aboriginality. Among the Aboriginal students there was some trend for a relationship between school leaving and degree of Aboriginality, with a higher proportion of school leavers among students of predominantly Aboriginal descent or of mixed descent (37 per cent) than among students of predominantly European descent (29 per cent).

School leaving, place of residence and composition of family. For the Aboriginal group only an analysis of school leaving according to place of residence and composition of family was also undertaken. While the number of cases in some groups was small, the trends were of interest to note.

There was little difference in the proportion of school leavers among students living at home and students living in an institution (21 and 25 per cent). However, the proportion of school leavers among students living with foster parents was particularly high, with seven of the eleven students living with foster parents leaving school (64 per cent), while the proportion of school leavers among students living with relatives was low, with only one of the seven students living with relatives leaving school (14 per cent).

There was also a relationship between school leaving and composition of family, with 20 per cent of students from two-parent families leaving school as compared with 54 per cent of students from one-parent families.

School leaving, school achievement, and attitudes to school. A series of analyses were carried out to determine whether there were any significant differences in school achievement or attitudes to school between students who had left school and those who were still at school. One-way analyses of variance were applied to test for significant differences in test and attitude scores between school leavers and school stayers. These were applied separately to Aboriginal and to non-Aboriginal students. A summary of the results of these analyses is shown in Table 6.12.

There was a consistent trend for the test scores of the school stayers to be higher than the test scores of the school leavers in both the Aboriginal and the non-Aboriginal groups. However, these differences were significant only in the case of the mathematics test in the Aboriginal group.

There was also a trend for the attitude scores of the school stayers to be higher than the attitude scores of the school leavers, and these differences were significant in the case of the Like School and the Self-regard scales in the case of the Aboriginal students and in the case of

Table 6.12 Mean Scores on Tests and Attitude Scales of School Leavers and School Stayers, and Significance Level of Differences in Mean Scores

		Aboriginal Students			Non-Aboriginal Students		
Test	Group	N	Mean Score	Significance Level	N	Mean Score	Significance Level
Standard Progressive Matrices	At School	69	36.8	NS	157	40.2	NS
	Left School	34	33.3		50	38.1	
Reading: Vocabulary Score	At School	59	20.0	NS	128	26.4	NS
	Left School	25	17.1		36	22.1	
Reading: Speed of Comprehension Score	At School	59	17.5	NS	128	21.0	NS
	Left School	25	16.6		36	19.4	
Mathematics	At School	59	11.7	< .05	132	16.8	NS
	Left School	26	8.3		35	14.5	
Attitude Scale							
Like School	At School	69	38.0	< .001	156	36.6	< .001
	Left School	34	31.9		50	29.4	
Academic Motivation	At School	69	42.2	NS	156	41.7	< .001
	Left School	34	41.4		50	37.7	
Self-regard	At School	69	37.0	< .05	156	36.0	NS
	Left School	34	34.5		50	35.5	

the Like School and the Academic Motivation scales in the case of the non-Aboriginal students.

Whether or not students left school or stayed at school was also related to their form level, students at higher form levels being generally more likely to leave school than students at lower form levels (see Table 6.7). Since students at the higher form levels would also tend to score higher on the tests than the students at the lower form levels, this would introduce a trend contrary to the general trend for school stayers to score higher than school leavers. It was therefore decided to repeat the analyses on Form 3 students only. By restricting the analyses to a single form level the confounding influence of form level on test scores would be eliminated. The majority of both Aboriginal and non-Aboriginal students were in Form 3, and this is also a critical level for school leaving, since retention rates for secondary students start to drop markedly after Form 3, particularly in the case of Aboriginal secondary school students.

Table 6.13 Mean Scores on Tests and Attitude Scales of School Leavers and School Stayers, and Significance Level of Differences in Mean Scores: Form 3 Students

		Aboriginal Form 3 Students			Non-Aboriginal Form 3 Students		
Test	Group	N	Mean Score	Significance Level	N	Mean Score	Significance Level
Standard Progressive Matrices	At School	38	38.2	< .05	105	41.0	< .05
	Left School	22	34.1		21	37.0	
Reading: Vocabulary Score	At School	34	20.2	< .05	82	27.6	NS
	Left School	16	15.4		14	21.2	
Reading: Speed of Comprehension Score	At School	34	16.9	NS	82	21.6	NS
	Left School	16	14.7		14	19.9	
Mathematics	At School	34	12.1	< .05	87	17.5	< .05
	Left School	17	7.8		14	12.0	
Attitude Scale							
Like School	At School	38	37.9	< .001	104	36.9	< .001
	Left School	22	31.7		21	29.7	
Academic Motivation	At School	38	43.1	NS	104	41.5	NS
	Left School	22	40.8		21	39.0	
Self-regard	At School	38	38.1	< .01	104	36.2	NS
	Left School	22	33.4		21	35.4	

The results of the analyses applied to Form 3 students only are shown in Table 6.13. In this case the differences in test scores between the school stayers and the school leavers were more marked, and in the case of the Aboriginal students were significant on all tests except the speed of comprehension score on the reading test, and in the case of the non-Aboriginal students were significant on the Standard Progressive Matrices test and the mathematics test. Differences in score between school stayers and school leavers were lowest on the speed of comprehension score of the reading test for both Aboriginal and non-Aboriginal students.

The pattern of differences between school stayers and school leavers for the Form 3 students on the attitude scales was similar to that for the total group of students, except in the case of the Academic Motivation scale for non-Aboriginal students where the difference in mean score for school leavers

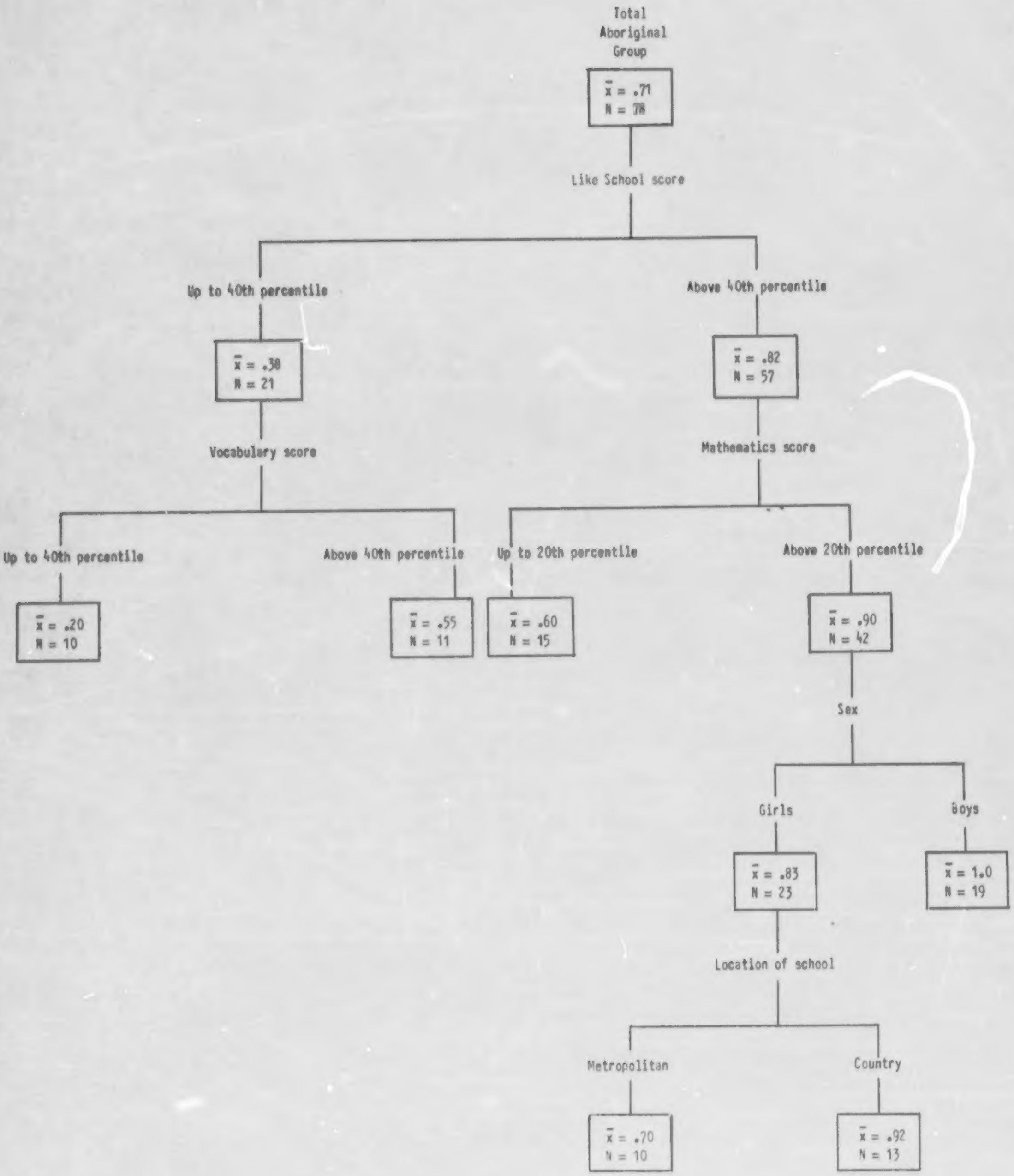
Total Aboriginal Group
x̄ = .71
N = 78
Like School score
Up to 40th percentile
x̄ = .38
N = 21
Above 40th percentile
x̄ = .82
N = 57
Vocabulary score
Up to 40th percentile
x̄ = .20
N = 10
Above 40th percentile
x̄ = .55
N = 11
Mathematics score
Up to 20th percentile
x̄ = .60
N = 15
Above 20th percentile
x̄ = .90
N = 42
Sex
Girls
x̄ = .83
N = 23
Boys
x̄ = 1.0
N = 19
Location of school
Metropolitan
x̄ = .70
N = 10
Country
x̄ = .92
N = 13

Figure 6.1 AID Analysis: Background Characteristics of 14-Year-Old Aboriginal Students as Predictors of School Leaving, Using School Retention Rate as the Criterion Score

and school stayers was not significant, although this difference was significant for the total group of non-Aboriginal students. In the case of the non-Aboriginal students there was some tendency for an association between scores on the Academic Motivation scale and form level, students at the higher form levels tending to score lower on this scale. This suggests that the significant relationship between school leaving and scores on the Academic Motivation scale in the total non-Aboriginal group may be due in part to the fact that both school leaving and scores on the Academic Motivation scale are related to form level.

Predictors of school leaving

Results of AID analyses. AID analyses were applied to determine the most important predictors of school leaving for Aboriginal and non-Aboriginal students. The predictor variables included in the analyses were father's occupation, type of school attended, location of school, sex, form level, degree of Aboriginality, teacher's assessment of potential, and scores on the tests and attitude scales. Test and attitude scores were classified into five categories on the basis of the total distribution of scores, the cutting points being selected at the 20th, 40th, 60th and 80th percentiles. The criterion variable was whether the student was still at school or whether the student had left school as at the end of April 1974. This criterion was expressed in the form of the School Retention Rate, that is, the proportion of students still at school at the end of April 1974. These analyses were applied separately to the Aboriginal and the non-Aboriginal students.

The results of the AID analyses are illustrated in Figure 6.1 and Figure 6.2.

The overall School Retention Rate was higher for the non-Aboriginal students (.79) than for the Aboriginal students (.71), indicating a higher proportion of school leavers among Aboriginal students than among non-Aboriginal students.

In the case of the Aboriginal students (Figure 6.1) the most important predictor of school leaving was score on the Like School scale, students scoring above the 40th percentile on this scale being more likely to stay at school than students scoring below the 40th percentile. Of those students scoring higher on the Like School scale, score on the mathematics test was the next most important predictor of school leaving, students scoring above the 20th percentile on this test being more likely to stay at

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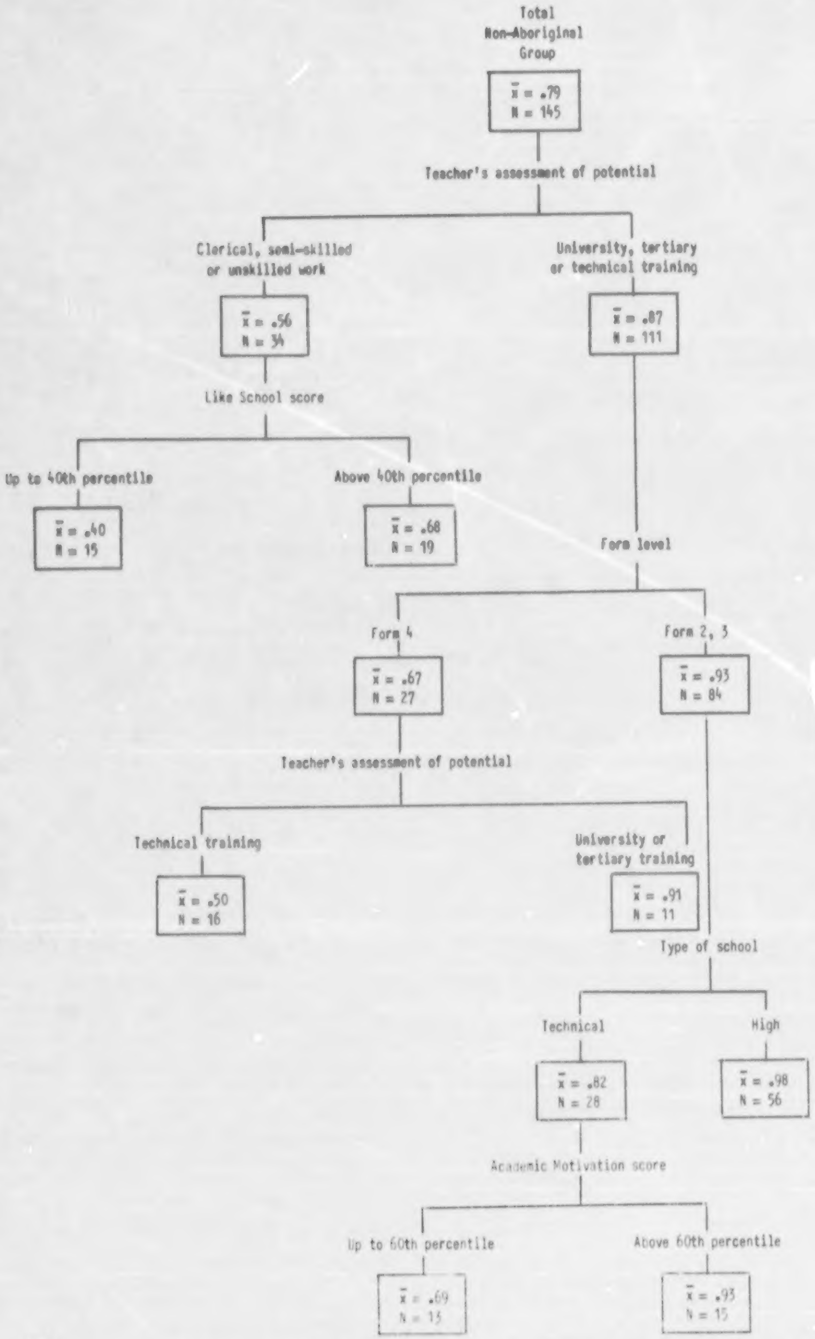
Total
Non-Aboriginal
Group
x̄ = .79
N = 145
Teacher's assessment of potential
Clerical, semi-skilled or unskilled work
x̄ = .56
N = 34
University, tertiary or technical training
x̄ = .87
N = 111
Like School score
Up to 40th percentile
x̄ = .40
N = 15
Above 40th percentile
x̄ = .68
N = 19
Form level
Form 4
x̄ = .67
N = 27
Form 2, 3
x̄ = .93
N = 84
Teacher's assessment of potential
Technical training
x̄ = .50
N = 16
University or tertiary training
x̄ = .91
N = 11
Type of school
Technical
x̄ = .82
N = 28
High
x̄ = .98
N = 56
Academic Motivation score
Up to 60th percentile
x̄ = .69
N = 13
Above 60th percentile
x̄ = .93
N = 15

Figure 6.2 AID Analysis: Background Characterisitcs of 14-Year-Old Non-Aboriginal Students as Predictors of School Leaving, Using School Retention Rate as Criterion Score

school than students scoring below the 20th percentile. Of the students scoring higher on the mathematics test, sex was an important predictor of school leaving, boys being more likely to stay at school than girls, while among the girls location of school was an important predictor, students attending country schools being more likely to stay at school than students attending metropolitan schools.

Of the Aboriginal students who scored low on the Like School scale, the most important predictor of school leaving was score on the vocabulary test, students scoring above the 40th percentile on this test being more likely to stay at school than students scoring below the 40th percentile.

In the case of the non-Aboriginal students (Figure 6.2) teacher's assessment of potential was the most important predictor of school leaving, students assessed as capable of university, tertiary or technical training being more likely to stay at school than students assessed as capable of clerical or sales work or unskilled or semi-skilled work only. Of those assessed as capable of university, tertiary or technical training, form level was the next most important predictor of school leaving, students in Form 2 or Form 3 being more likely to stay at school than students in Form 4. Of the students in Form 2 and Form 3, type of school attended was the next most important predictor of school leaving, students attending high schools being more likely to stay at school than students attending technical schools, and of the Form 2 and Form 3 students attending technical schools, score on the Academic Motivation scale was the next most important predictor, students scoring above the 60th percentile on this scale being more likely to stay at school than students scoring below the 60th percentile. Of the Form 4 students assessed as capable of university, tertiary or technical training, teacher's assessment of potential again came out as an important predictor of school leaving, students assessed as capable of university or tertiary level training being more likely to stay at school than students assessed as capable of technical training. Form 4 is of course the minimum form level generally required for technical training or apprenticeship, while entry to a tertiary institution generally requires the completion of Form 6. Students intending to do an apprenticeship or technical training course could therefore be expected to leave school at the end of Form 4, while those intending to enter a tertiary institution would need to continue to Form 6.

Of the non-Aboriginal students assessed as capable of clerical or sales work or of unskilled or semi-skilled work only, score on the Like School

Table 6.14 Results of AID Analysis: Ranking of Final AID Groups on Criterion Score (School Retention Rate): Aboriginal Group

Rank	Description	N	Mean Score
1	Likes school, scores above 20th percentile on mathematics test, boy	19	1.0
2	Likes school, scores above 20th percentile on mathematics, attends country school, girl	13	.92
3	Likes school, scores above 20th percentile on mathematics test, attends metropolitan school, girl	10	.70
4	Likes school, scores below the 20th percentile on the mathematics test	15	.60
5	Does not like school, scores above the 40th percentile on the vocabulary test	11	.55
6	Does not like school, scores below the 40th percentile on the vocabulary test	10	.20

scale was the next most important predictor of school leaving, students scoring above the 40th percentile on this scale being more likely to stay at school than students scoring below the 40th percentile.

The ranking of the final AID groups distinguished according to score on the criterion variable is shown in Table 6.14 and Table 6.15.

In the case of the Aboriginal group (Table 6.14) the students most likely to stay at school are the boys who like school and who score above the 20th percentile on the mathematics test (100 per cent still at school). Also very likely to stay at school are the girls attending country schools who like school and who score above the 20th percentile on the mathematics test (92 per cent still at school). Somewhat less likely to stay at school are the girls attending metropolitan schools who like school and who score above the 20th percentile on the mathematics test (70 per cent still at school).

Those students most likely to leave school are the students who do not like school and who score below the 40th percentile on the vocabulary test (only 20 per cent still at school). Students showing a moderate likelihood of staying at school are those who like school but score below the 20th percentile on the mathematics test (60 per cent still at school), and those

Table 6.15 Results of AID Analysis: Ranking of Final AID Groups on Criterion Score (School Retention Rate): Aboriginal Group

Rank	Description	N	Mean Score
1	Assessed as capable of university, tertiary or technical training, in Form 2 or Form 3, attends high school	56	.98
2	Assessed as capable of university, tertiary or technical training, in Form 2 or Form 3, attends technical school, academic motivation high	15	.93
3	Assessed as capable of university or tertiary training, in Form 4	11	.91
4	Assessed as capable of university, tertiary or technical training, in Form 2 or Form 3, attends technical school, academic motivation low	13	.69
5	Assessed as capable of clerical or sales work or unskilled or semi-skilled work only, likes school	19	.68
6	Assessed as capable of technical training, in Form 4	16	.50
7	Assessed as capable of clerical or sales work or unskilled or semi-skilled work only, does not like school	15	.40

students who do not like school but who score above the 40th percentile on the vocabulary test (55 per cent still at school).

In the case of the non-Aboriginal group (Table 6.15) the students most likely to stay at school are those who are assessed by their teachers as capable of university, tertiary or technical training, who are in Form 2 or Form 3, and who attend a high school (98 per cent still at school). Also very likely to stay at school are students assessed as capable of university, tertiary or technical training, who are in Form 2 or Form 3, attend a technical school, and have high academic motivation (93 per cent still at school), and Form 4 students assessed as capable of university or tertiary training (91 per cent still at school).

Non-Aboriginal students most likely to leave school are those assessed as capable of clerical or sales work or unskilled or semi-skilled work only, and who do not like school (40 per cent still at school). Also fairly likely to leave school are Form 4 students assessed as capable of technical training (50 per cent still at school). Those students showing a moderate likelihood of leaving school are students assessed as capable of university, tertiary or technical training, who are in Form 2 or Form 3, attend a technical school, and have low academic motivation (69 per cent still at school), and students assessed as capable of clerical or sales work, or unskilled or semi-skilled work only, but who like school (68 per cent still at school).

The results of the AID analyses therefore indicate that whether or not students are likely to stay at school or to leave school is related to a combination of factors, the most important of which are the student's ability, either as assessed by the teacher or as assessed by the various tests administered, and whether or not the student likes school. Other factors such as form level, type of school attended, location of school, sex and academic motivation come out as important predictors within sub-groups already divided in terms of ability level or liking school.

In the Aboriginal group the most important predictor of school leaving is whether or not the student likes school, while in the non-Aboriginal group the most important predictor is teacher's assessment of potential. Father's occupation is not an important predictor of school leaving in either group, nor is degree of Aboriginality in the case of the Aboriginal group.

Score on the mathematics test appears to be a particularly critical factor in the case of Aboriginal students more likely to stay at school, while score on the vocabulary test appears to be particularly critical for Aboriginal students more likely to leave school.

Results of the 1977 follow-up

The information obtained in 1974 on school leaving identified only those students who left during or at the end of the year in which they turned fifteen, or early in the following year. In order to obtain information on the final date of leaving school and the highest form level completed for all the students in the sample a further follow-up was undertaken in 1977. In this case all schools participating in the study were sent a list of those students in the sample who were still at their school in 1974, and for each student were asked to indicate the date of leaving school, the highest form completed, and any information known on the student's destination on leaving school or the occupation that the student went to on

Table 6.16 Results of 1977 Follow-up: Age of Leaving School: Percentage of Students at each Age Level

Age of Leaving School	Aboriginal Group	Ability Match Group	Age Match Group
15:0 - 15:11	37	45	31
16:0 - 16:11	30	29	33
17:0 - 17:11	21	17	25
18:0 - 18:11	8	8	10
19 or over	1	1	0
Still at School (Aged 19 in 1977)	2	0	0
N	107	89	87
N as a Percentage of Total Sample	98	82	80

leaving school. Additional information on date of leaving school and on employment after leaving school was obtained for the Aboriginal students from the Victorian Office of the Commonwealth Department of Education and from the Aboriginal Employment Section of the Commonwealth Department of Employment and Industrial Relations in Victoria.

Age of leaving and highest form level completed. The age of leaving school and the highest form completed for students in each group is shown in Table 6.16 and Table 6.17.

In all groups the majority of students left school at the age of 15 or 16 years. The highest proportion of school leavers aged 15 was found in the ability match group, and the lowest proportion of school leavers aged 15 was found in the age match group, but overall these differences were not very great. The age match group also had a slightly higher proportion of students leaving school at the age of 17 or 18 years as compared with the other groups, but again these differences were not very great.

A higher proportion of students in the age match group completed Form 5 or Form 6, with 40 per cent of students in this category in the age match

Table 6.17 Results of 1977 Follow-up: Highest Form Completed: Percentage of Students in each Category

Highest Form Completed	Aboriginal Group	Ability Match Group	Age Match Group
Form 1	2	1	1
Form 2	16	10	5
Form 3	34	27	18
Form 4	22	39	35
Form 5	18	13	23
Form 6	7	7	17
Still at school in 1977	2	0	0
N	107	89	87
N as a Percentage of Total Sample	98	82	80

group compared with 20 per cent in the ability match group and 25 per cent in the Aboriginal group. In addition, there were two students in the Aboriginal group who were still at school in 1977. One of these students was in Form 5, and one was in Form 6. Both these students would have had to repeat one form since 1973 to be at these form levels in 1977.

Occupation on leaving school. Information on the student's destination or occupation on leaving school was also obtained wherever possible. This information is not complete, and may not be reliable since the information held by the school on the student's destination on leaving school may not always be accurate, or the student may have subsequently changed his occupation or his plans for further study. However, an analysis was made of the information provided by schools or obtained from other sources.

The students' occupations or destinations on leaving school were classified into five categories, corresponding to those used for the teacher's assessment of potential. These categories were as follows:

1 University

2 Other tertiary institution or further education or training course, including bridging courses at Technical Institutes and nursing.

3 Apprenticeship or technical training

Table 6.18 Results of 1977 Follow-up: Occupation or Destination on Leaving School: Percentage of Students in each Category

Occupation or Destination on Leaving School	Aboriginal Group	Ability Match Group	Age Match Group
University	2	0	2
Other Tertiary or Training Course	7	7	11
Apprenticeship or Technical Training	4	27	25
Sales or Clerical Work	35	32	38
Semi-skilled or Unskilled Work	53	34	25
N	55	56	53
N as a Percentage of Total Sample	50	52	49

5 Semi-skilled or unskilled work, including labouring or factory work

The percentage of students in each of these categories according to their occupation or destination on leaving school is shown in Table 6.18.

Information on destination or occupation on leaving school was obtained for about half the students in each group. Relatively few students in any group went on to university or other tertiary institutions or training courses. One Aboriginal student was stated to have gone to university to do law, one undertook nursing training, and two others were stated to have gone to a tertiary institution. There were several other cases in which students were said to have applied for entry to a tertiary institution or a nursing course, but these were not included in the analysis since there was no definite indication as to whether they had been accepted for the course they had applied for.

Of the non-Aboriginal students who went on to tertiary education or training one was stated to have gone to university, one was stated to have gone to a college of advanced education, one was undertaking secondary teaching training, one went to the Victorian College of Pharmacy, and several were undertaking training for nursing.

Table 6.19 Results of 1977 Follow-up: Number of Students in Occupational Categories according to Teacher's Assessment of Potential

		Occupation on Leaving School		
Teacher's Assessment of Potential	N	1 or 2 University or Tertiary Course or Training	3 or 4 Technical Training or Sales or Clerical Work	5 Unskilled or Semi-skilled Work
Aboriginal Group				
University or Tertiary Course (1 or 2)	6	2	2	2
Technical Training or Sales or Clerical Work (3 or 4)	38	3	19	16
Semi-Skilled or Unskilled Work (5)	11	0	0	11
Ability Match Group				
University or Tertiary Course (1 or 2)	7	3	4	0
Technical Training or Sales or Clerical Work (3 or 4)	39	1	28	10
Semi-Skilled or Unskilled Work (5)	10	0	1	9
Age Match Group				
University or Tertiary Course (1 or 2)	17	4	11	2
Technical Training or Sales or Clerical Work (3 or 4)	33	3	20	10
Semi-Skilled or Unskilled Work (5)	3	0	2	1

The main difference between the Aboriginal and non-Aboriginal groups was in the proportion of students who went on to undertake technical training or apprenticeship courses. While only 4 per cent of the Aboriginal students went on to technical training or apprenticeship courses, 27 per cent of the ability match students and 25 per cent of the age match students went on to such courses. The proportion of students going on to unskilled or semi-skilled jobs was also higher in the Aboriginal group than in the other groups, with 53 per cent of the Aboriginal students taking unskilled or semi-skilled jobs as compared with 34 per cent of the ability match students and 25 per cent of the age match students. The proportion of students taking clerical or sales jobs was similar in the three groups.

Not all the students classified in these occupational categories had worked continuously since leaving school. In some cases students were stated to have been unemployed for quite extensive periods either before or after taking a particular occupation. There were six such cases in the Aboriginal group, but all were included in the occupational classification on the basis of the occupation that they had held when employed. In a number of cases students were stated to be employed, but no information was given on the type of job held (six cases in the Aboriginal group and one case in the ability match group), and in a number of other cases students were stated to be unemployed (seven cases in the Aboriginal group and four cases in the ability match group), or to be seeking employment (ten cases in the Aboriginal group).

Relationship between occupation on leaving school and teacher's assessment of potential. A further analysis was undertaken to determine the relationship between the type of occupation taken and teacher's assessment of potential. This is shown in Table 6.19. In this case, teachers' assessments of potential and occupational categories have been collapsed into three categories.

There was some relationship between teacher's assessment of potential and the occupational ranking of the student on leaving school. A higher proportion of students in the higher assessment categories went on to a tertiary course or technical training, while the majority of students assessed as capable of unskilled or semi-skilled work only actually went on to unskilled or semi-skilled work. There was however some trend for a higher proportion of the Aboriginal students assessed as capable of technical training or sales or clerical work to end up taking an unskilled or semi-skilled job than was the case in the non-Aboriginal groups.

Table 6.20 Results of 1977 Follow-up: Highest Form Completed According to Teacher's Assessment of Potential: Percentage of Students in each Category

Teacher's Assessment of Potential	N	Highest Form Completed		
		Form 1 or Form 2	Form 3 or Form 4	Form 5 or Form 6
Aboriginal Group				
1 University Course	1	-	-	100
2 Other Tertiary Course or Training	12	0	42	58
3 Technical Training	49	18	55	26
4 Sales or Clerical Work	22	10	64	27
5 Unskilled or Semi-skilled Work	20	35	65	0
Ability Match Group				
1 University Course	4	-	-	100
2 Other Tertiary Course of Training	6	-	50	50
3 Technical Training	41	2	78	20
4 Sales or Clerical Work	18	23	66	11
5 Unskilled or Semi-skilled Work	19	26	69	5
Age Match Group				
1 University Course	7	-	-	100
2 Other Tertiary Course of Training	22	-	32	68
3 Technical Training	36	6	61	34
4 Sales or Clerical Work	13	15	77	8
5 Unskilled or Semi-skilled Work	6	17	84	0

Relationship between highest form completed and teacher's assessment of potential. An analysis of highest form completed against teacher's assessment of potential was also undertaken. This is shown in Table 6.20.

There was a marked relationship between teacher's assessment of potential and highest form completed in all groups. All students assessed as capable of university training completed Form 5 or Form 6, while a half or more of those assessed as capable of other tertiary training also

Table 6.21 Results of 1977 Follow-up: Highest Form Completed Against Occupation on Leaving School: Percentage of Students in each Category

		Occupation on Leaving School		
		1 or 2	3 or 4	5
Highest Form Completed	N	University or Tertiary Course or Training	Technical Training or Sales or Clerical Work	Unskilled or Semi-skilled Work
Aboriginal Group				
Form 1 or Form 2	8	0	0	100
Form 3 or Form 4	31	3	45	52
Form 5 or Form 6	16	25	43	31
Ability Match Group				
Form 1 or Form 2	3	0	0	100
Form 3 or Form 4	42	0	64	36
Form 5 or Form 6	11	36	54	9
Age Match Group				
Form 1 or Form 2	2	0	50	50
Form 3 or Form 4	25	0	68	32
Form 5 or Form 6	25	24	60	16

completed Form 5 or Form 6. Relatively few of the students in any group assessed as capable of unskilled or semi-skilled work only completed Form 5 or Form 6, while the majority of the students assessed as capable of technical training or sales or clerical work completed Form 3 or Form 4. Students completing Form 1 or Form 2 only were mainly in the sales or clerical or semi-skilled or unskilled assessment categories in the non-Aboriginal groups, but in the Aboriginal group there were also a number of students in the technical training assessment category who completed only Form 1 or Form 2.

Relationship between highest form completed and occupation on leaving school. Finally an analysis was made of the relationship between highest form completed and occupational category on leaving school. This is shown in Table 6.21. There was again a marked relationship between highest form completed and subsequent occupation. All of the non-Aboriginal students and the majority of the Aboriginal students who went on to some form of tertiary training had completed Form 5 or Form 6, while virtually all of the students who had completed Form 1 or Form 2 only went on to an unskilled or semi-skilled job. Relatively few of the non-Aboriginal students who had completed Form 5 or Form 6 went on to an unskilled or a semi-skilled job. However, the proportion of Aboriginal students who had completed Form 5 or Form 6 and then went on to an unskilled or a semi-skilled job was higher

Thus overall the results of the 1977 follow-up study indicate a clear relationship between highest form completed, teacher's assessment of potential, and occupation on leaving school. However, there was some tendency for more of the Aboriginal students with a higher assessment of potential and a higher attainment level to end up in an unskilled or a semi-skilled occupation.

Summary

The results of the interview did not reveal marked differences between Aboriginal and non-Aboriginal students in their educational or occupational aspirations, or in those of their parents. The trend was for the aspirations of the ability match group to be somewhat lower than those of the other groups. The aspirations of the age match group tended to be slightly higher than those of the Aboriginal group, but differences were not great. However, the Aboriginal parents' aspirations for the completion of secondary schooling were higher than those of the non-Aboriginal parents, a higher proportion of the Aboriginal students indicating that their parents wished them to complete Form 6.

The home background questionnaire did not reveal any marked differences between Aboriginal and non-Aboriginal students in homework patterns, parental help and encouragement, television viewing or radio listening. However, there was some trend for Aboriginal students to spend less time on reading at home, to have less parental encouragement to read, to have fewer books in the home, and to be less likely to make use of a dictionary at home.

There were no marked differences in the type of subjects taken at school by Aboriginal and by non-Aboriginal students. The pattern of subjects taken by students varied mainly according to type of school attended and sex.

A higher proportion of the Aboriginal students left school during or at the end of the year they turned 15, or early in the following year. The results of the AID analyses indicated that the most important predictor of school leaving for the Aboriginal students was score on the Like School scale, while the most important predictor of school leaving for the non-Aboriginal students was teacher's assessment of potential. The results of the MCA analysis applied to the total group indicated that for the total group teacher's assessment of potential, form level and score on the Like School scale were the most important predictors of school leaving. The set of achievement variables contributed more to the variance in school leaving than the set of background variables or the set of attitude variables, while degree of Aboriginality contributed relatively little to the variance in school leaving over and above that already accounted for by achievement variables, background variables and attitude variables.

The results of the 1977 follow-up study indicated that the majority of both Aboriginal and non-Aboriginal students left school at the age of 15 or 16 years. Only 27 per cent of the Aboriginal students completed Form 5 or Form 6, as compared with 40 per cent of the age match students and 20 per cent of the ability match students completing these form levels. Relatively few students in any group went on to further education or tertiary training. A higher proportion of the non-Aboriginal students went on to some form of technical training or apprenticeship, whereas a higher proportion of the Aboriginal students went into unskilled or semi-skilled work on leaving school, and relatively few went into apprenticeships. The proportion of students going into sales or clerical work was similar for the three groups.

For both Aboriginal and non-Aboriginal students there was a clear relationship between highest form completed, teacher's assessment of potential, and occupation on leaving school. However, there was some tendency for more of the Aboriginal students with a higher assessment of potential and a higher attainment level to end up in an unskilled or semi-skilled occupation.

CHAPTER 7

SUMMARY AND CONCLUSION

The past decade has seen an increasing interest in and concern for the education of Aboriginal children in Australia. Prior to 1969, little objective information was available on the school attendance and performance of Aboriginal children. The series of studies reported here was undertaken in an effort to obtain basic information on Aboriginal students enrolled in Victorian schools; their number, distribution, attendance, achievement, acceptance, attitudes to school and school leaving patterns.

Summary of Results

The results of the survey studies provided information on the number and distribution of Aboriginal students in Victoria. Information on their attendance, their achievement as rated by their teachers, their mobility rate, the frequency of repetition of grades or forms, and their socio-economic background was also obtained. The findings of these studies did indicate a tendency for Aboriginal students to do more poorly at school than non-Aboriginal students, to be less regular attenders, to be less likely to continue to the upper levels of the secondary school, and to be more likely to leave school learly. The Aboriginal students also tended to come from a lower socio-economic background than non-Aboriginal students, and often from one-parent families or broken homes. These factors would undoubtedly affect their schooling and their attitudes to school, and would need to be taken into account in assessing the achievement and attendance of Aboriginal students as compared with that of non-Aboriginal students. It should however also be noted that there were a high proportion of Aboriginal students whose performance at school was rated as average or above average by their teachers, whose school attendance was regular, and whose adjustment at school and attitude to work was considered by their teachers to be good. These positive aspects of the education of Aboriginal children should not be overlooked.

The testing programs at the primary and secondary levels provided more detailed information on the school achievement and attitudes to school of selected samples of Aboriginal and non-Aboriginal students. At both the primary and secondary levels the performance of the Aboriginal students on various tests of achievement in the basic school subjects was significantly below that of non-Aboriginal students selected at random from the same schools as the Aboriginal students. In the case of the secondary school study the scores of the Aboriginal students were also consistently below those of the non-Aboriginal comparison group selected to match the Aboriginal students as closely as possible in ability level. However, these differences were less marked and were not statistically significant on all the tests administered.

In the case of the primary school study the performance of the Aboriginal and non-Aboriginal students was compared with that of random samples of Australian children and migrant children from non-English-speaking backgrounds, drawn from the same grade levels as the Aboriginal and non-Aboriginal samples and tested on the same battery of tests (de Lemos, 1975). The performance of the Aboriginal students was consistently below that of the migrant children from non-English-speaking backgrounds, and the pattern of differences from Grade 4 to Grade 6 was also different for the migrant and the Aboriginal children. In the case of the arithmetic tests, the trend was for the differences between Aboriginal and non-Aboriginal children to increase from Grade 4 to Grade 6, whereas the differences between the Australian and the migrant children tended to decrease from Grade 4 to Grade 6. There was also a tendency in the Aboriginal group for a higher proportion of cases in the very poor category at the Grade 6 level than at the Grade 4 level, particularly in the case of the arithmetic tests. These findings point to a cumulative deficit in the case of Aboriginal children which is not found in the case of the migrant children, the differences between Aboriginal and non-Aboriginal children tending to increase as the children progress through the primary school.

At both the primary and secondary levels the comparison of the distribution of scores for Aboriginal students with the expected distribution according to Victorian norms indicated a disturbingly high proportion of Aboriginal students scoring in the below average categories, and particularly the very poor category, and relatively few Aboriginal students scoring in the above average categories. Whereas only 4 per cent of Victorian students would be expected to score in the very poor category, the proportion of Aboriginal students scoring in this category ranged from 10 to 40 per cent on the vocabulary, comprehension and mathematics tests. This indicates a very high proportion of Aboriginal students with severe handicaps in the critical areas of word knowledge, reading comprehension and mathematics. There is an urgent need for the monitoring of achievement in these areas, and for the setting up of remedial programs to assist those Aboriginal students requiring extra help with reading and mathematics.

The assessment of attitudes to school indicated less marked differences between Aboriginal and non-Aboriginal students. At the secondary level no significant differences were found between the Aboriginal students and the random sample of non-Aboriginal students on the Like School, Academic Motivation and Self-regard scales. However, there was some tendency for the lower ability non-Aboriginal group (the ability match group) to score lower on the attitude scales, and these differences were significant in the case of the Academic Motivation scale. The Aboriginal students therefore tended to score higher on the attitude scales than lower ability non-Aboriginal students, despite the fact that their achievement scores were lower than those of the lower ability non-Aboriginal group.

At the primary level there was some tendency for the Aboriginal students to score lower than the non-Aboriginal students on the behaviour item scores derived from the teacher's questionnaire. These differences were significant in the case of the Academic Application items at the Grade 2 and Grade 4 levels. There was also some tendency for the Aboriginal students to score lower on the Social Adjustment items at all grade levels, but these differences were not statistically significant.

There was therefore some tendency at the primary level for Aboriginal students to score lower than non-Aboriginal students on the behaviour items assessing attitudes to school and social adjustment, but this tendency was not found at the secondary level, where the Aboriginal students tended to score higher on the attitude scales than the lower ability non-Aboriginal students, and at the same level as the random sample of non-Aboriginal students. It is possible that this difference between the results at the primary and secondary levels is due to differences in the manner in which the assessment of attitudes was made at the primary and the secondary level. In the case of the primary students, the assessment of attitudes was based on teacher assessments, whereas at the secondary level it was based on the responses of the students themselves. It is not possible to determine whether the teacher assessments or the student responses are the more valid indicators of student attitudes. However, the results from the teacher assessments and the student responses are fairly consistent, both indicating less marked differences in attitudes to school than in achievement between Aboriginal and non-Aboriginal students. The fact that differences between

Aboriginal and non-Aboriginal students tend to be greater on attitude measures based on teacher assessments than on attitude measures based on student responses could be due to some tendency for a bias in the teacher assessments. The teachers may expect poorer attitudes and poorer social adjustment in the case of Aboriginal students and this expectation may influence their assessments.

An analysis of the factors related to test performance at the primary level indicated that the background variable most closely related to test performance was father's occupational ranking, this variable being more closely related to performance in the case of the non-Aboriginal students than in the case of the Aboriginal students. Number of days absent and age were also related to test performance in some cases.

At the secondary level the variable most closely related to test score for both Aboriginal and non-Aboriginal students was generally form level. In the case of the Aboriginal students, per cent of days absent and location of school were also related to test score, while in the case of the non-Aboriginal students father's occupation and type of school attended tended to be more closely related to test score.

An analysis of the factors related to attitude scores at the secondary level indicated that the background variables most closely related to attitude scores were generally father's occupation, form level, type of school attended, and per cent of days absent. Location of school was generally related to attitude scores in the case of the Aboriginal students, but this variable was not important in the case of the non-Aboriginal students.

An analysis of school leaving patterns at the secondary level indicated a higher proportion of school leavers among Aboriginal students than among non-Aboriginal students. The factors most closely related to school leaving were generally teacher's assessment of potential, form level, and scores on the Like School scale. Achievement variables explained a greater proportion of the variance in school leaving for the total group than background variables, attitude variables or degree of Aboriginality.

The results of the 1977 follow-up study indicated that the majority of both Aboriginal and non-Aboriginal students left school at the age of 15 or 16 years. The proportion of Aboriginal students completing Form 5 or Form 6 was somewhat lower than that of the random sample of non-Aboriginal students, but slightly higher than that of the lower ability non-Aboriginal group (the ability match group). Occupation on leaving school was related to both

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teacher's assessment of potential and highest form completed, but there was some trend for a higher proportion of the Aboriginal students with a higher assessment of potential and a higher attainment level to end up in an unskilled or semi-skilled occupation than was the case in the non-Aboriginal groups.

Conclusion

The results of this series of studies point to consistent differences in achievement between Aboriginal and non-Aboriginal students at both the primary and the secondary level. At the primary level there is some indication of a cumulative deficit, the differences between Aboriginal and non-Aboriginal students tending to increase from Grade 4 to Grade 6. However, this cumulative deficit does not appear to continue into the secondary level, the level of difference at the secondary level being similar to the level of difference at the upper primary level.

Differences between Aboriginal and non-Aboriginal students in attitudes to school are less marked. At the secondary level there were no significant differences in attitudes to school between the Aboriginal students and the random sample of non-Aboriginal students, but some tendency for the Aboriginal students to score higher on the attitude scales than the lower ability non-Aboriginal students. At the primary level there was some tendency for the Aboriginal students to score lower on the attitude measures than the non-Aboriginal students, but these differences were significant in only two cases.

These results do not support the view that the low achievement of Aboriginal students can be attributed to poor motivation, a poor self-concept, or a dislike of school. There is also no evidence from the secondary school study that Aboriginal students tend to leave school early even when their achievement at school would have made it reasonable for them to continue at school. For both the Aboriginal students and the non-Aboriginal students there is a close relationship between teacher's assessment of potential and school leaving, with a much higher proportion of school leavers among students with a lower assessment of potential in both the Aboriginal and the non-Aboriginal groups. While the proportion of school leavers is higher in the Aboriginal group than in the non-Aboriginal group, the achievement level of the Aboriginal students is lower than that of the non-Aboriginal students, and it is likely that the higher school leaving rate of the Aboriginal students is related to their lower achievement levels.

It could perhaps be argued that the attitude measures used in these studies are not valid indicators of the Aboriginal students' attitudes to school. Some differences were found in the attitude scores based on teacher assessments as compared with those based on student responses, the teacher assessments used at the primary level tending to show greater differences in attitude scores between Aboriginal and non-Aboriginal students than the student responses used at the secondary level. At the secondary level the students were all holders of an Aboriginal Secondary Grant. The payment of this grant is subject to the student attending school regularly and to his progress being satisfactory, and the students are in regular contact with the officials of the Department of Education who administer the Grants Scheme and whose duties include liaison with school staff, the interviewing of students and reporting on their progress and attendance, and making recommendations with regard to the continuation or the withdrawal of the grant. While the attitude scales were not administered to the Aboriginal students by officers of the Department of Education but were administered by ACER staff, it is possible that they associated this questionnaire with the Department of Education and that their responses were affected by their knowledge that the continuation of their grant depended on their satisfactory progress and attendance at school. Alternatively it is possible that Aboriginal students tend to be more conforming than non-Aboriginal students and tend to give the response that they believe to be the more correct or acceptable response, or that as members of an ethnic minority group and aware of their own educational disadvantage they feel a need to make a favourable impression both for themselves and for their group, and are therefore influenced to give more favourable responses on the questionnaire.

We have no way of determining whether the attitude scales used in these studies are valid measures of the actual attitudes to school of Aboriginal and non-Aborigingal students, either in the case of the teacher assessments or in the case of the student responses. As Keeves (1974) has pointed out, the validation of attitude scales is a complex issue. There is no objective criterion against which the scales can be validated, as in the case of cognitive tests. The confidence which can be placed in the attitude scales based on student responses is based mainly on the relevance of the questions asked and the meaningfulness of the replies received. However, Keeves (1974) reports some relationship between students' responses to the attitude scales and teachers' ratings of the students' attitudes. This relationship was not very strong, but this could be attributed as much to the inability of the teachers to assess students' attitudes accurately as to the inadequacies of the attitude scales. In the case of our studies, there was some consistency in the results of the attitude measures based on teacher assessments and on student responses, but with some tendency for greater differences between Aboriginal and non-Aboriginal students when the attitude scores were based on teacher assessments. This discrepancy could be the result of either a bias in teacher assessments due to teacher expectancies of differences in attitudes between Aboriginal and non-Aboriginal students, or to a tendency for Aboriginal students to give what they consider to be the 'correct' or more acceptable response on the attitude questionnaire, thus masking a real difference in attitudes between Aboriginal and non-Aboriginal students.

Our findings on the Aboriginal students' self-concepts and on the relationship between academic achievement and attitudes to school and self are in agreement with the findings reported by Watts (1976). While Watts used different measures to assess attitudes to school, self-concept and school achievement, her findings also indicate that the majority of Aboriginal students hold favourable attitudes towards themselves, and that higher achievers and lower achievers do not reveal different attitudes to education, school or teachers.

An important question that emerges from this study is 'What determines whether or not a student likes school?' In the case of the Aboriginal students, whether or not a student likes school is a major determinant of school leaving, and yet there is no marked relationship between liking school and school achievement or general ability, and no marked relationship with any of the background variables studied. It is no doubt dependent on a complex interaction of factors, including home background factors, school factors and personality factors. A study designed to unravel these factors would be a complex but worthwhile undertaking.

The results of this study are specific to Victoria, and cannot be generalized to other States. The results of the recent ACER study of literacy and numeracy in Australian schools indicate that the achievement levels of Aboriginal students in the Northern Territory are very much lower than those of Aboriginal students in other States (Bourke and Parkin, 1977). Census figures also indicate that the educational level of Aborigines living in different States in Australia vary markedly (Fitzgerald, 1976). There are, for example, relatively few Aborigines in New South Wales and Victoria who have never attended school, but nearly half the Aborigines in the Northern Territory fall into this category. There are also very few Aborigines in the Northern Territory who have attended high school, whereas over half the Aborigines in Victoria and New South Wales have attended high school.

It is also important to bear in mind that the life styles of Aborigines living in different parts of Australia are very different. In the Northern Territory and in parts of Queensland, Western Australia and South Australia there are large groups of Aborigines who live in isolated settlements or reserves and whose way of life still follows to some extent the traditional patterns of tribal Aborigines. In New South Wales and Victoria, on the other hand, the majority of Aborigines are living in cities or in small country towns, and have adopted a way of life closer to that of the rest of the Australian community. The type of educational program appropriate in one case would be very different to that appropriate in another case, and the expectations of the levels of achievement would also be very different.

The term Aborigine also covers people of both full-Aboriginal and of part-Aboriginal descent. In the northern parts of the country the majority of Aborigines would be of full-Aboriginal descent, while in the eastern areas the majority of Aborigines would be of part-Aboriginal descent. The full-Aborigines would therefore tend to be living in isolated areas in the north and to be following a traditional way of life, whereas the part-Aborigines would be more likely to be living in southern or eastern areas and to be urban dwellers living in the cities or fringe dwellers living in small country towns.

It is therefore not meaningful to make generalizations about the educational achievement of Aborigines across different States. It is likely that the findings from the Victorian study would also apply to Aborigines living in similar conditions in other States. However, it would be necessary to undertake further studies in other States to determine the levels of school achievement and patterns of school leaving of Aboriginal students in other parts of Australia. Such studies are clearly needed, since although there is clear evidence that the educational status of Aborigines is very much lower than that of any other group in Australia (Broom, 1970; Fitzgerald, 1976), there is little precise information on the actual levels of achievement and the factors related to achievement. Educational status is clearly related to occupational status and post-school qualifications and training, and census figures indicate only a very small proportion of

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Aborigines with post-school qualifications or in the higher occupational categories (Broom, 1971; Fitzgerald, 1976). Objective data on school achievement and the factors determining school leaving and whether or not students are likely to go on to further education or post-school training are required for the planning of specific educational programs to meet the specific needs of Aboriginal students. Such programs should aim to provide Aboriginal students with the opportunity of acquiring the basic level of education required for further training, and the incentive to go on to post-school training or further education in order to acquire the qualifications that would open up to Aborigines the same job opportunities as those available to other Australians. This aim is consistent with the views expressed by Aborigines themselves. In their report to the Schools Commission (1975), the Aboriginal Consultative Group stressed the importance of education for the realistic self-determination of the Aboriginal people of Australia. They indicated that the highest quality of education available was necessary to provide Aborigines with the same range of choice for their future as that open to any other Australian, and that the under-achievement of Aborigines in all areas of education is both serious and debilitating to their success in later life.

The results of these studies provide objective data on levels of achievement and patterns of school leaving for Aboriginal students in Victoria. This information could provide a basis for identifying needs and for planning educational programs to meet these needs. It could also provide a basis for monitoring the effectiveness of educational measures introduced to assist Aboriginal students by determining to what extent these measures affect the overall achievement levels of Aboriginal students, their school retention rates, and their participation in tertiary and post-school training courses.

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